MODERN TRANSPORT

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CURRENT TOPICS

Retirement of Sir Landale Train

APART from his professional ability as a civil engineer, acquired during 50 years of railway service, perhaps the outstanding characteristic of Sir J. Landale Train, who retired from membership of the British Transport Commission on September 30, has been his championship of the man on the job. One of his last acts in office was to send to a Sunday newspaper a trenchant rejoinder to what he regarded as undeserved criticism in its correspondence columns of these men and their immediate chiefs. Having quoted chapter and verse in refutation of the complaint he asserted that "by any fair standard of judgment this was a remarkably fine performance by a type of man with whom I have worked for years . . . in flood, snow and fog, under conditions which can only be equalled in wartime." In fact, Jack Train was never happier than when among permanent way men, and even in later years, when most of his time was spent at Marylebone Road, he never missed an opportunity of getting out on the line and renewing acquaintanceship with inspectors, gangers and platelayers, whose confidence and friendship he enjoyed. For a long time he has been a tower of strength to the Permanent Way Institution and in 1955 readily accepted an invitation to become president of the Railway Students Association. Installed by his predecessor in that office, Sir Reginald Wilson, who aptly described him as Britain's foremost railway engineer, Mr. Train (as he then was) chose for his presidential address the subject of work study, his object being to introduce the human touch to a modern science which must figure prominently in the development of the railway modernisation plan.

A Factual and Human Philosophy

THE address was typical of the man, and many of its aphorisms, lest they be forgotten, are worthy of repetition. The new R.S.A. president did not hesitate to deprecate the misuse of time and motion study in the difficult days following the 1914-18 war, "unscrupulously and without regard to human relations." Proper application of the science to both management and labour, he said, was essential in the modern world and, in particular, to the success of the modernisation plan. Management, indeed, needed as much education in the matter as did labour, and it was only by co-operation between the two that the science could produce its own reward in reduced physical effort and some incentive through the pay packet. Men should not be treated like robots: the human element was the most important factor and we must discover the most efficient way of using our inherited craftsmanship. Frequently the craftsman could see a better way of carrying out a job than the man in an office, and he should share in the benefits arising therefrom. The great thing was to be happy at one's work: there could be no greater happiness than the successful completion of a given task. Human understanding, needed for the application of work study, could only be acquired from experience gained from day-to-day contacts with those actually engaged on direct production. Essentials such as these are the basis of Sir Landale Train's philosophy; closely followed, they should do much to restore the pride of railwaymen in their daily worthwhile tasks.

Street Lighting and Road Safety

IN a paper read to the recent conference of the Association of Public Lighting Engineers at Harrogate, Mr. W. Robinson, lighting engineer of the British Electrical Development Association, said that street lighting (excluding trunk roads) cost approximately 7s. 2d. per head of the population per annum, and absorbed less than 3 per cent of the total expenditure on local government services. The cost to the individual ratepayer of under 2d. a week helped to explain why the public at large took street lighting so much for granted, but made it more difficult to understand the cheese-paring economies which were so much practised. However one might regard those figures, said Mr. Robinson, it was extremely difficult to find in them any justification for switching off the lighting while it could perform any useful purpose. They should be viewed in the light of the appeals made by more than one police authority for the general continuation of street lighting after midnight as an important deterrent to crime, and a means of greatly increasing the effectiveness of the night police beat. A very rough estimate was that over 50 per cent of all street lighting lanterns were at present inoperative after midnight. The changeover to all-night burning of all existing street lighting in England and Wales would only add about 1s. 3d. a year per head to the street lighting bill and this sum could well be repaid from increased police efficiency alone. Even though street lighting was undoubtedly very good value for the ratepayers' money, even though it called for only 3 per cent of national rate expenditure, nevertheless the problem of how to finance its improvement where it most needed improvement was a large one. Street lighting deserved more generous treatment, but above all it required that serious consideration should be given to the disparity of resources available to different local authorities for a service which was equally necessary for all. In regard to road safety, Mr. Robinson said that good street lighting could reduce night-time accidents by as much as 30 per cent and good street lighting was necessary on all populated main thoroughfares, not only on some. The night-time road accident problem was farther away than ever from solution or even containment, he added. A real attack on the problem could only be made when it was recognised that more money was required to be spent on street lighting than at present and that the lighting authorities which had the greatest need for street lighting improvement often had the least money for that purpose. The aim of the co-ordination of street lighting between localities with varying lighting standards would not be achieved by any amount of goodwill so long as street lighting finance was tied to local economies and thus divorced from the actual lighting requirements of the thoroughfares themselves.

LEADING FEATURES IN THIS ISSUE

Pressed Steel in Europe

WITH an eye on the Free Trade Area and the expanding European market, Pressed Steel Co., Limited, celebrated the official opening of its attractive new offices and showroom in the Galerie Ravenstein, Brussels, on September 16. In the presence of a distinguished gathering, the new premises were declared open by M. Longerstaey, Chef du Cabinet to the Belgian Minister for External Trade, who commended this example of initiative to other European industrialists. Pressed Steel's Prestcold refrigerators are already well known in Europe and the company now looks forward to a growth of European business in its other two products, car bodies and railway wagons. "A vast proposal like the establishment of an area of free trade ultimately embracing all countries of the European Continent is not just another 'trade treaty'," said Mr. J. R. Edwards, managing director of Pressed Steel, "it is an act of history—an act that one day may well lead to the creation of the United States of Europe which should be a great power for peace in the world and enable us to live and prosper together like equal members of one great European family. Although we are one of the largest British manufacturers of refrigeration equipment with a substantial export trade to many parts of the world, I should not like you to think of us only as a company of refrigerator manufacturers. I and my colleagues are convinced that our car body and railway wagon divisions can play a much increased role in our European activities, and the opening of these premises in Brussels is evidence of this conviction." The opening cocktail party and lunch were attended by Pressed Steel distributors from leading European capitals, representatives of Belgian importers of British motor cars and representatives of the British and overseas Press.

B.T.C. Work Study Booklet

A NEW illustrated booklet on work study, *Work Study and You*, is being issued by the British Transport Commission to its staff. The booklet, the first on this subject to be produced by the Commission, defines work study and its purpose in a simple way, and explains its application to the Commission's various undertakings. In addition to separate chapters on the scope, operation and organisation of work study and on prior consultation between management and staff, the booklet contains a special section which shows how work study investigators go about their jobs. The introduction stresses that work study schemes are a co-operative effort. It states that "management, unions and men get together and agree on them beforehand because they are aimed at making the most economical and effective use of manpower, materials and equipment. This is to the benefit of all concerned. The staff benefit in the knowledge of a job well done and often in increased earnings; the travelling and trading public benefit because work study enables better service to be provided and at less cost. The industry as a whole benefits because more money becomes available to be ploughed back in the form of still better plant and equipment, improved staff accommodation and the like." To those who query whether it works, the answer is that thousands of men already taking part in work study schemes in British Transport know it does, and many of them are taking home larger pay-packets and are happier doing a better job of work. On British Railways the scope for work study is vastly expanded by the modernisation plan. The men are told in the booklet: "When actual proposals are being investigated you will be told what is happening. Work study is not being done in a corner. No one is trying to put a fast one over on you. No work study scheme can be successful without the willing co-operation of those involved in it. And it is realised that people will only co-operate if the proposals are fair." So far 700 members of the staff of B.T.C. undertakings have received full basic training in work study and 2,000 have attended appreciation courses.

Electrification of Trans-Siberian Railway

FURTHER plans have been announced in Moscow by the central government of the U.S.S.R. for the electrification of the 6,000-mile-long Trans-Siberian Railway. Its whole length should be electrified by 1965. So far about 1,560 miles of track have been electrified, in particular the stretch from the West Siberian town of Novosibirsk to the Volga. By 1960 the most important stretch —from Moscow to the Baikal Sea—will have been electrified, and work on this nearly 3,500-mile stretch is "proceeding well." When this has been completed, the relatively unimportant stretch from the Baikal Sea to Vladivostock, on the Pacific, will be commenced. Also with a completion date of 1965 is the electrification of the Moscow—Leningrad line. This will permit a through electric service from the Baltic to the Pacific. Operating costs will, according to the Soviet report, be cut considerably by electrification. A steam train going, for example, from Moscow to Vladivostock, uses nearly 285 metric tons of coal whereas the same journey with electric traction will use energy equivalent to only 85 metric tons. Journey times also will be reduced drastically. Speeds will rise by 40 per cent with the inception of electric services and this is expected to alleviate greatly congestion on the Trans-Siberian line caused by the ever-increasing industrial development of Siberia.

Comet 4 Progress

THREE days after the triumphal return to Hatfield on the evening of September 27 of the de Havilland Comet 4 G-APDA after an 11-day tour of North and South America, the de Havilland Aircraft Co., Limited, brought off a well-planned surprise by handing over to the British Overseas Airways Corporation not one Comet as expected, but two! This was accompanied by the promise of another before the end of the week. There will thus be available the three machines which B.O.A.C. has felt were necessary before opening commercial jet services on the North Atlantic. Proving flights have already started and, as the certificate of airworthiness was granted last Monday, the actual date of commencement of a weekly service has been brought appreciably nearer. Inevitably much has been done to draw public attention to the rivalry between B.O.A.C. and Pan American Airways as to which will be the first off the mark but it is not always made clear that neither the Comet 4 nor the Boeing 707-120, which P.A.A. will use, were designed primarily for North Atlantic service. That the former is suitable is indicative of the amount by which the aircraft has exceeded specified performance. The longer-range version of the Boeing will be delivered to the American operator later and also, of course, to B.O.A.C., whereafter Comets will be devoted to the work for which they have always been intended. Meanwhile the 4 has shown its abilities with marked effect and underlined its readiness to use airport runways of normal length. That in itself is calculated to alleviate the headaches of those who have to provide the runways and those who have to use them.

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Canals and Traffic

THE Minister of Transport is understood to be considering the report of the Committee of Inquiry into Inland Waterways, produced under the chairmanship of Mr. H. Leslie Bowes, managing director of the Pacific Steam Navigation Company, and presented to Parliament last July after two years' investigation and deliberation. Pending the Minister's decision on the recommendations, the British Transport Commission, owner of the great majority of the country's inland waterways, has properly refrained from commenting on the report, some of whose recommendations, particularly regarding immediate expenditure and organisational control, are open to serious remark. And so the first reaction to it from an interested party is to be found in a "commercial appreciation" submitted to *The Times* by Mr. L. N. Morton, general manager of the Willow Wren Carrying Company. Mr. Morton, as an independent canal carrier of 25 years' standing, is enthusiastic about the Committee's recommendations, which go considerably beyond those of the Commission's Board of Survey set up in 1954. The Board, it will be recalled, listed 336 miles of waterway in what it termed Group I for improvement; 995 miles in Group II for retention for transport purposes under "existing conditions"; and 771 disused or almost trafficless miles for consideration for transfer to other authorities; the Caledonian and Crinan Canals in Scotland were recommended for transfer to the Secretary of State for Scotland. The Bowes Committee likewise names two categories for retention—Class A (380 miles) and Class B (935 miles)—but proposes that while the former should be improved and developed the latter should definitely be restored to prescribed standards and so maintained for 25 years. A Waterways Redevelopment Board would relieve the Commission of responsibilities extraneous to canal transport.

A Mounting Deficit

WITHOUT ignoring the limitations of the Class B waterways, the net annual deficit on which had risen to £321,079 in 1956, the Committee felt that, given encouragement to enterprise and ingenuity, they might have a future. Encouragement would take the form, not only of reinstatement and maintenance in full working order, but also provision of security of tenure to operators by abolishing tolls and replacing them by a vessel capacity levy of £1 a ton. The Committee estimated the annual loss in revenue arising from this proposal at £164,000, thus raising the deficit to roughly £500,000. Apart from this, the cost of reinstating the Class B waterways is understood to be not less than £3½ million, and possibly considerably more. These extra costs would have to be borne by the taxpayer, as the report recommends that financial relief should be given to the Commission in respect of the working deficit on the Class B waterways and of the cost of their reinstatement. Indeed, the Committee points out that although the proposed measures may arrest, or in places reverse, the downward trend of traffic, it sees no prospects that receipts on Class B waterways will suffice to meet charges properly chargeable to revenue. Mr. Morton, of course, is delighted at the chance these measures will provide of increasing payloads by 10-15 per cent. He believes that the institution of a capacity levy would cause a minor revolution in rates between all points on the waterways and would increase the competitive position of canal carriers by enabling substantial reductions in rates, amounting in many cases to 20 per cent. He believes also that with increased competitive power the canals would attract considerable traffic from the roads. But even the Bowes Committee had to agree that the relative slowness of waterway transport must be a handicap unless offset by the advantages of carrying large loads yielding good results in ton-miles per man-hour. Despite its recommendations for widespread physical improvement it had to point out that only in favourable conditions could waterways provide a means of transport satisfactory to users and at lower cost or greater convenience than road or rail.

Scope Severely Limited

ONE might go further and suggest that only traffic needing a minimum of handling, such as that discharged overside to barge or destined for waterside premises, is likely to be attracted, whatever the rate charged by waterway. These conditions are more likely to be met on the canals and rivers in Class A (or the Board of Survey's Group 1) on which the Commission is already spending some £5½ million. The difficulty of sharing Mr. Morton's optimism is accentuated by certain facts to which attention is drawn in the report. For instance, in reviewing the extent of the contribution which canals can make to transport as a whole it calculates that rail tonnage is 27 times that of the waterways and that ton-mileage on inland navigations is equivalent to less than 1 per cent of that on the railways. It even quotes authoritative opinion that a hypothetical 50 per cent increase in the ton-mileage performance of all the waterways could be handled by 300 5-ton lorries, which is a mere fraction of one year's natural increase in road haulage. All of which makes it difficult to appreciate the recommendation for the reinstatement of the Class B waterways. Moreover, Mr. Morton's appraisal of the benefit to other road users resulting from diversion of commercial traffic to revitalised waterways must be qualified by the Committee's suggestion that road congestion would not be materially diminished thereby.

Will History Repeat Itself?

"GIVEN such a new charter for the canals," he says, "the increased flow of traffic would bring about modernisation of the carrying units. The old, picturesque narrow boats would gradually disappear and be replaced by up-to-date carrying craft pure and simple; motor power would revert to the towpath and craft would be worked through canal lengths by gangs living on the shore." This fanciful picture of canals in the nuclear age seems to go beyond even the Bowes recommendations. Passage for boats of no more than 30 tons capacity (60 tons in pairs) would be provided by reinstatement of the Class B canals. To improve them so as to accommodate vessels of the type and size Mr. Morton seems to envisage would cost many millions more. Narrow locks would need to be widened, bridge holes opened out, and obstructions caused by the centrally placed toll houses on the Birmingham Canal Navigations, as well as fixed structures on these and other waterways, would have to be removed. And all to no purpose except further provision of transport resources that are already extravagant. Apart from all this, it needs to be remembered that in the heyday of canals, when they offered the best means of transporting freight, a good deal of the capital sunk in them was lost. Not all the canals that were completed were successful, even in the days when inland water transport enjoyed a monopoly. We do not want history to repeat itself.

Forthcoming Events

October 4.—Omnibus Society. Annual dinner. At Clarendon Restaurant, Hammersmith, W.6. 7 for 7.30 p.m.

Railway and Canal Historical Society (North Western). Paper by Mr. C. R. Clinker, "Railway History in Acts of Parliament." At Oddfellows Institute, Chestergate, Stockport. 6.30 p.m.

October 6.—Institute of Road Transport Engineers (Scottish). Paper by Mr. R. Sandey, "Oxy-Acetylene Welding Techniques." At Institution of Engineers and Shipbuilders, Elmbank Crescent, Glasgow. 7.30 p.m.

October 7.—Institute of Road Transport Engineers (West Regional). Paper by Dr. F. J. Wallace, "The Free Piston Gasifyer with special reference to Vehicle Applications." At Liverpool Architectural Society's rooms, Bluecoat Chambers, School Lane, Liverpool, 1. 7.30 p.m.

Institute of Road Transport Engineers (Eastern). Paper by Mr. R. Cox, "Trends in Modern Road Passenger Transport." At Swan Hotel, Bedford. 7 p.m.

Railway Correspondence and Travel Society (Sheffield). Paper by Dr. J. R. Hollick, "The Leek and Manifold Railway." At Livesey Clegg House, Union Street, Sheffield. 7.30 p.m.

Institute of Transport (Midland). Paper by Mr. L. E. Marr, "Developments in the Short Sea Trades." At Birmingham Exchange and Engineering Centre, Stephenson Place, Birmingham. 6.30 p.m.

Permanent Way Institution (Leeds and Bradford). Paper by Dr. S. Hulme, "The Industrial Injuries Act." At British Railways Social and Recreation Club, Ellis Court, Leeds City Station. 7 p.m.

South Wales and Monmouthshire Railways and Docks Lecture and Debating Society. Paper by Mr. A. D. Lobley, "The History of the Cunard Line." At Angel Hotel, Cardiff. 6.30 p.m.

October 8.—Institute of Road Transport Engineers (East Midlands). Paper by Mr. R. B. Robinson, "The Development of Automatic Transmission for Commercial Vehicles." At Mechanics Institute, Nottingham. 7.30 p.m.

Institute of Road Transport Engineers (Southern). Paper by Mr. R. Cox, "Trends in Modern Road Passenger Transport." At Palmeira Hotel, Hove. 7.30 p.m.

October 9.—Institution of Electrical Engineers. Presidential address by Mr. S. E. Goodall. At Savoy Place, W.C.2. 5.30 p.m.

British Railways (London Midland) Lecture and Debating Society. Debate. At Clerical Staff Dining Club, Cardington Street, Euston. 5.45 p.m.

October 10.—Institute of Road Transport Engineers (South Wales). Paper by Mr. R. B. Robinson, "The Development of Automatic Transmission for Commercial Vehicles." At South Wales Institute of Engineers, Cardiff. 7 p.m.

Electric Railways Society. Paper by Mr. G. W. Morant, "Scandinavian Electric Railways." At Exchange and Engineering Centre, Birmingham. 7.15 p.m.

A BRILLIANT SHOW

Unparalleled Range to Meet Every Purpose

ADVANCE EVIDENT IN ALL DEPARTMENTS

NEVER before has there been assembled under one roof a collection of commercial road vehicles so effectively covering the needs of every type of goods and passenger haulage operation than is to be seen this week at Earls Court; nor, probably, has there been an exhibition of the products of a single industry providing such a wealth of evidence of fertile design over so wide a field. Novelty and advancement extend from the provision of larger-capacity more-efficient buses to help relieve the present difficulties of the bus operators and a greatly widened range of the huge off-road load carriers required for development projects all over the world at the top end of the range, down to a new London taxicab, small rural buses and highly manoeuvrable labour-saving goods and parcels vehicles at the other. They are to be found equally in chassis and coachwork and in the multifarious accessories, components and tyres and not least in the range of servicing equipment. In short, the industry appears better than ever equipped to provide the operator at home with the most efficient equipment available in the world and to preserve and extend its impressive participation in supplying the commercial vehicle needs of countries abroad.

A study in frontal treatment of some of the eight-wheelers: Guy Invincible, Bowyer plastics on Thornycroft Trusty and, right, Jennings light alloy on E.R.F. 68G

And the Roads to Run On

Encouraging news of the nation's major road schemes was given by Mr. Harold Watkinson, Minister of Transport and Civil Aviation, when he performed the opening ceremony at Earls Court last Friday. He said that there were now under construction 195 miles of motor roads and trunk roads, while plans for a further 850 miles were nearing completion. He congratulated the contractors on progress with the London—Birmingham Motorway and reported that the country's first motorway, the Preston Bypass, would be open by the end of the year.

All will welcome this rather belated provision of roads designed for modern traffic; manufacturers will benefit from having near at hand operational testing grounds more comparable to conditions in many of the countries to which their vehicles are exported and operators will be able to run faster schedules more economically, though the harder-pressed side of the operating industry, the passenger carriers, will benefit less than the goods carriers and only insofar as the new bypasses relieve urban congestion and bus companies operate interurban and tours services. They would prefer to see the Minister as energetic and fast working as he has undoubtedly been in providing improved trunk roads in pressing for the removal of the crippling tax on fuel and in the provision of two-tier intersections and off-street car parks to relieve congestion in towns, much more difficult though these tasks might be.

Undoubtedly the most noticeable change that has come about in the bus field is the general adoption of the 30 ft. by 8 ft. plan dimensions for double-deckers and all chassis makers and body builders now produce vehicles of this size. Not a few of these are shown with staircase and platform moved from the rear to the front end and with power-operated doors under the control of the driver—a form which many operators are coming to consider preferable (if they are to reap the full benefit of the improved operating economies promised by these larger buses) for the reduction in boarding and alighting accidents and the relief of the conductor for the collection of fares from upwards of 70 passengers.

New Standard

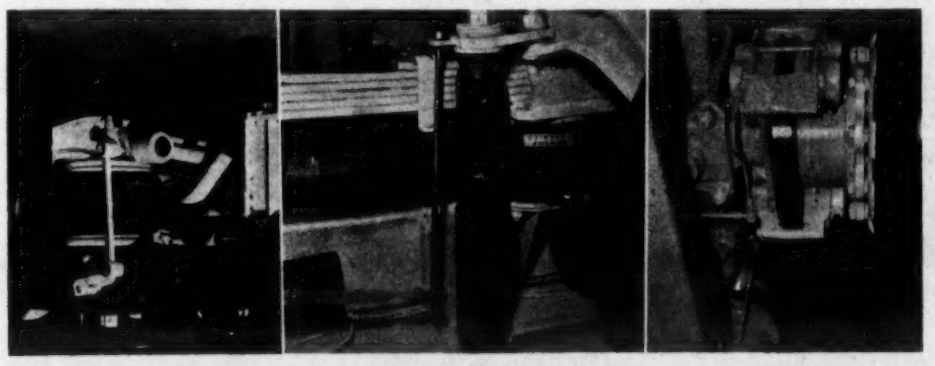
Not all routes are suitable for these very high-capacity buses, either through loss of freedom of movement on narrow and congested routes or the lower volume of passenger traffic offering, and the stylised 27 ft. 6 in. long rear-platform double-decker for up to about 60 passengers is still freely available. The costs of operating the two sizes of vehicle are not significantly different and, if present and imminent experimental services with the newer type of vehicle bear out their promise of advantage, it seems that the larger front-entrance double-decker might well become the standard British bus in the provinces, with the present conventional form retained in bulk only by operators such as London Transport with an overwhelming proportion of short-distance passengers in dense urban traffic.

Apart from this major development there are many others in the design of coachwork and furnishings to interest the operator and passenger. Standardisation of one type of vehicle for the bulk of a fleet is a well-known means of reducing operating and maintenance costs, though often the operating compromises and complications involved outweigh the benefits of standardisation. But the conventional layout of the Willowbrook-bodied 70-seat Dennis Loline (Bristol Lodekka licence) and the Park Royal-A.E.C. 76-seat Bridgemaster, both with an overall height under 13 ft. 6 in., will attract many operators having routes passing under low bridges. The small 12-seat bus complying with recently amended p.s.v. regulations based on well-established van chassis is well in evidence at the show. Notwithstanding that the established bus operators are quite convinced that they can reap no benefit from their use, surely there will be found some place in the pattern of rural passenger services, which are suffering most in the present difficulties of the bus industry, for these sound and economical vehicles.

Technically, the most obvious developments in passenger vehicles are the adoption of rear positioning of the engine by Leyland in the Atlantean; a general switch to air pressure brake operation on the larger double-deckers and heavy-duty single-deckers; the inclusion of fully automatic gear-change control as optional equipment on chassis

(*Continued on page* 14)

The Jensen-Tempo 13-seat bus with front-wheel drive and independent suspension is relatively costly; right, roof rack and lightweight ladder approved for the Ford Thames 11-seat bus



A study in air suspension: Guy single-decker rear end using Firestone bellows (the Girling disc brake can also be seen); Leyland-M.C.W. integral Olympic single-decker front end using Dunlop units combined with light leaf springs and beam axle; and, extreme right, A.C.V. Reliance single-decker front end also using Dunlop bellows and beam axle

LORRY—BUS—COACH

L.T.E. and Coach Pick-Up Points

OBJECTION lodged by London Transport against the granting of additional picking-up points on Grey-Green express coastal coach routes at Enfield Highway and Waltham Cross has been overruled by the Minister of Transport on appeal. The Minister says that the matters to which regard should be had in relation to an application of this kind arising within the London Passenger Transport area are, in essence, no different from those applicable in the case of similar applications arising elsewhere. London Transport argued the statutory obligation laid upon it to provide or secure the provision of an adequate and properly co-ordinated system of passenger transport for the London Passenger Transport area; and that it is entitled to protection from abstraction arising out of the grant of additional picking-up facilities within that area to operators of long-distance coach services (like those under appeal). This appears to the Minister to have force but is not to say that a long-distance operator must of necessity be barred from extending his picking-up facilities within the area.

The Minister considers that George Ewer and Co., Limited, showed that its express services attracted a substantial volume of traffic from the Enfield Highway and Waltham Cross areas and he feels on balance that the greater convenience to be afforded such passengers by the additional picking-up facilities granted to Grey-Green outweighs in this instance any possible abstraction of traffic from the services of London Transport. He has therefore decided to dismiss the appeal. The Minister does not feel able to adopt the recommendation of the inspector that the appellant should not in this instance be required to pay the Minister's costs in connection with the appeal inquiry. It is the normal course for an unsuccessful appellant to be required to pay the Minister's costs in respect of an appeal, since these would otherwise fall upon public funds. The Minister does not regard the fact that the issues of a case are closely balanced as a sufficient reason for departing from his usual practice in this regard.

Two examples of recent additions to the Leicester City Transport fleet: a Leyland Titan PD3 with Park Royal 74-seat body in the city; right, one of the fleet of Leyland Tiger Cubs with 44-seat M.C.W. bodies on the Outer Circle route

ARTCO Decisions

SEVERAL members of the old company were present at the open meeting of ARTCO (Associated Road Transport Contractors, Limited) in London this week, together with a number of hauliers which was interested in joining the organisation. Mr. Henry Walker was in the chair. It was agreed that the new ARTCO formed on association lines should go forward. Applications for membership will be specifically invited from members of the R.H.A. long-distance functional group, but the principles of selected membership will be continued. The entrance fee is to be five guineas, with a minimum subscription for the first year of 10 guineas covering a total carrying capacity of up to 50 tons and an additional guinea for every 10 tons in excess with maximum subscription of 25 guineas. The subscription rates are intended to defray expenses. A substantial number of those present expressed a desire to join. A further meeting is to be held in London on November 28 at which Mr. Allan Cusick will take the chair.

New Ferry Ship for Tilbury—Antwerp

TO meet the ever-increasing demand for the carriage of road haulage vehicles to the Continent, the Transport Ferry Service announces that its latest drive-on, drive-off ship, the flagship *Bardic Ferry*, will take up service on the Tilbury—Antwerp route on Monday, November 3. Mr. John H. Bustard, general manager of the company, said "the volume of traffic we are now handling between Tilbury and Antwerp has increased three-fold during the last two years. British road haulage is rapidly becoming international, and we believe by putting the *Bardic Ferry*, the most up-to-date vessel of her kind in the world, on this run, we are helping achieve this aim. We are strengthening the bridge between England and the Continent." The *Bardic Ferry* will replace the two converted LSTs, *Empire Baltic* and *Empire Celtic*, and is expected to make three voyages a week in each direction. This will increase the carrying capacity by 25 per cent. The new ship can carry up to 90 vehicles and 55 passengers across the Channel at 14 knots.

Peter Slater Haulage Group

THE Peter Slater group of haulage companies now has a new garage and extended office premises at its headquarters in Gelderd Road, Gildersome, near Leeds. This undertaking has made very rapid progress since its beginnings from scratch just after the war. Mr. Peter Slater has built up an organisation now controlling 214 vehicles, specialising in bulk transport of coal and liquids throughout Great Britain, with services spreading to the Continent. The operating companies are Peter Slater, Limited, and Bulk Liquid Transport, Limited.

Damages for Interrupted Bus Service

IN a reserved judgment in Northern Ireland, the Great Northern Railway Board has been awarded £475 compensation in an action against the Minister of Home Affairs for losses sustained by the Board due to the spiking of the Newry—Carlingford road on January 28 last. The road was spiked under the Civil Authorities Special Powers Act, 1922, for the purpose of hampering the activities of illegal organisations. This made it impossible for the G.N.R. to run an uninterrupted bus service between the two places, and the board had to facilitate the travelling public by introducing a shuttle service, using two buses instead of one. It also suffered loss and damage through the reduction in the number of passengers and, therefore, claimed compensation. The judge said "the number of passengers who ceased to use this bus service would grow fewer and fewer until the loss became a minimum," so he would make no attempt to assess damages for the future. The road is still spiked.

Bus and Coach Developments

D. Goff, Hingham, applies for the licences of A. G. Rix, Limited, Foulsham, East Dereham.

D. B. Burton, Norwich, applies for services operated by the executors of C. L. Saunders, North Lowestoft.

E. H. Crinage, Ventnor, applies for a local express service to Ventnor Station at present licensed to the Southern Vectis Omnibus Co., Limited.

Hackett's Coaches, Limited, Manchester, seeks licences held by two Southend-on-Sea operators, Stanway Coaches (Southend), Limited, and H. H. Smith (Red Coaches).

One-man operation started on Yarmouth Corporation services on Sunday, September 28, when routes 5 (Vauxhall—Barrack Estate) and 6 (Cobholm—Barrack Estate) were converted from double-deck working. The vehicles used are London Transport Guy 26-seaters of which five have been hired, as recorded in MODERN TRANSPORT of September 20. It is planned to use two of these in a new circular service 8 in Gorleston.

London Transport has agreed to an authorisation for Sunnymede Coaches, Limited, Chigwell, to operate a bus service along Manor Road, Chigwell, between the Bald Hind (Fencepiece Road) and Chigwell Row (The Maypole), serving Grange Hill Station en route. This 1¼-mile section of road was previously covered by London Transport bus route 26, which was withdrawn in August. The new operator proposes a service about every 60 min., including Sunday morning, using a one-man 29-seat vehicle.

NEW VAN RANGE

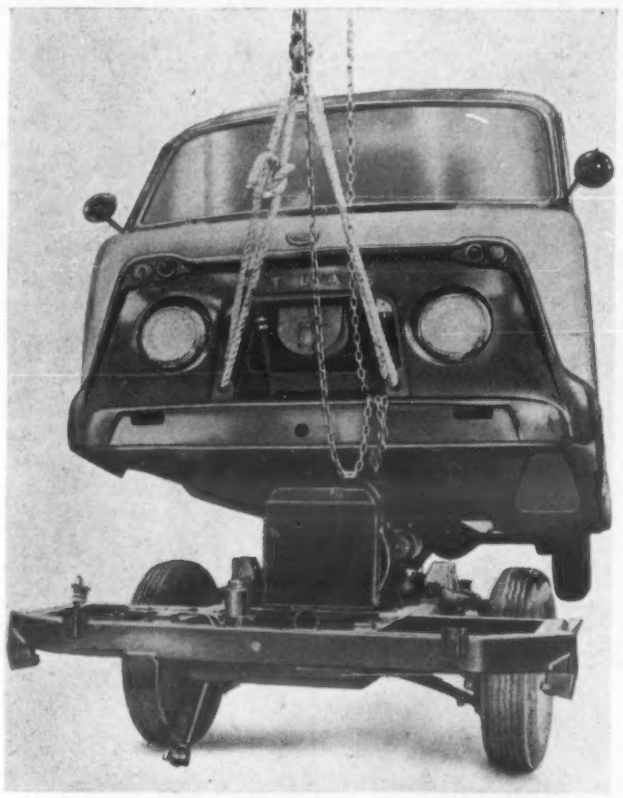
The Standard Atlas 10-12 Cwt.

EDITORIAL reference has already been made in our issue of September 20 to the appearance at Earls Court of the new Standard Atlas 10-12 cwt. van and pick-up truck. This represents the first product of the Standard Motor Co., Limited, to be designed ab initio for commercial purposes although it has of course been marketing small commercial units on car chassis for some time. It may, moreover, be remarked that the 6-cwt. van and pick-up truck continue in production and are also on show on the Standard stand together with a 10-cwt. commercial chassis designed for special custom-built bodies and incorporating a number of units and components from the Vanguard car. These can include the power unit although that from the Ensign is an alternative.

The Standard 6-cwt. pick-up truck has an all-steel body; right, the new Atlas 10-12 cwt. van

The Atlas Range

On the van version of the Atlas special sliding doors can be specified but side hinged doors are fitted as standard. The sliding doors incorporate a hinge mechanism so that the closed doors are flush with the body, but in the open position the doors lie alongside the body. This ingenious arrangement does not involve cutting down the load space to accommodate the doors. A side hinged single door is fitted at the rear.



Simplicity of maintenance has been a special aim in the design of the Atlas. This view shows removal of engine, gearbox and front suspension as one unit

The van has a load capacity of 180 cu. ft. in the body of the van, taking the internal dimensions as 92 in. long by 63 in. wide and 55 in. high with additional space beside the driver available when a passenger is not being carried. This is claimed as greater than any vehicle with a similar payload.

Special attention has been given to the carriage of very large and awkwardly shaped loads by the provision of a particularly high and wide goods area. Rear loading of the van by means of the wide side hinged door is both convenient and easy and the low-loading height of 22½ in. from the ground reduces the effort necessary to load and unload heavy articles to the minimum. When front hinged cab doors are fitted, a large hinged door to the side of the van to facilitate quicker and safer kerb-loading is available as an extra.

Turning Circle

Both the Atlas van and the pick-up have a turning circle of 29 ft. This high degree of manoeuvrability means of course easier parking. The independent front suspension has been designed to give the increased roll resistance needed on a vehicle with the front track of 3 ft. 9 in. compared with the rear track of 4 ft. 4¾ in. The single laminated transverse leaf spring is specially mounted so that when one front wheel rises over a bump or during cornering the centre section of the spring moves downwards with the effect of raising the other end of the spring. Hydraulic brakes are provided.

Performance

The o.h.v. 948-cc. engine fitted to the Atlas is one of the well-proved Standard-Triumph car power units but has a compression ratio of 7 to 1 as against 8 to 1 for the car engine, so that it will run satisfactorily on commercial grade petrol. It develops 35 b.h.p. at 4,500 r.p.m. giving adequate power when the vehicles are fully laden yet it offers outstanding economy. On straight runs a fully laden vehicle has been found to give 35 m.p.g. and on multi-stop delivery work averaging four stops a mile, the consumption remains at a level of approximately 25 m.p.g. Fully laden with 10-12 cwt. of goods, a driver and a passenger, the top speed is more than 50 m.p.h. and the van will accelerate through the gears from 0-30 m.p.h. in 15 sec.

Cab

The driver's seat is adjustable. The engine itself has been inclined 10 deg. to the left to cut down the cab space needed by the engine cover. A passenger seat is available as an extra, but is part of the basic specification of export models. The sun visor, trip recorder in the speedometer, large parcel shelf in the fascia, passenger footrest, and rubber floorcovering for the cab are standard fittings. Sound deadening material is incorporated in the door panels and the cab headlining is of washable plastics material. The roof light is positioned to illuminate both the cab and goods compartment and provision is made for the fitting of an additional light to the rear of the goods compartment as an optional extra.

Particular attention has been paid to ventilation for the driver and there is a separate roof ventilator for the goods compartment as well as sliding windows with pivoting quarterlights on the cab doors. Scuttle ventilators provide an extra supply of air into the cab.

Maintenance

The all-steel chassis and body are designed and mounted together so that all component parts combine to lend strength to the entire structure. For routine maintenance the engine cover has a fastener catch permitting quick removal, all parts of the chassis are easily accessible and the provision of a four-corner jacking system permits quick and safe access and speedy wheel changes. The spare wheel is mounted at the rear of the cab where it does not take up valuable load space.

For major servicing, the engine, gearbox, steering and front suspension can be removed quickly as one unit as shown in an accompanying illustration. On disconnecting the controls and freeing the chassis bolts, it is simple to raise the rear of the chassis frame carrying the body by means of a hoist, leaving the front section of the chassis frame and the engine free to be moved away from the rest of the vehicle for special attention.

Pick-Up Truck

The pick-up truck embodies all the mechanical advantages of the forward-control van and differs basically only in the design of the load space. A generous rear cab window to give maximum visibility and a robust all-steel body with a large carrying capacity and a drop down rear gate make it suitable for carrying a wide variety of loads.

The hinterland of Spain was chosen by Standard-Triumph engineers as the location for testing the

(*Continued on page 9*)

The new and the old in the Western Region: New Baling—Greenford diesel railcar set at Drayton Green Halt and 0-4-2 tank on the push-and-pull now superseded

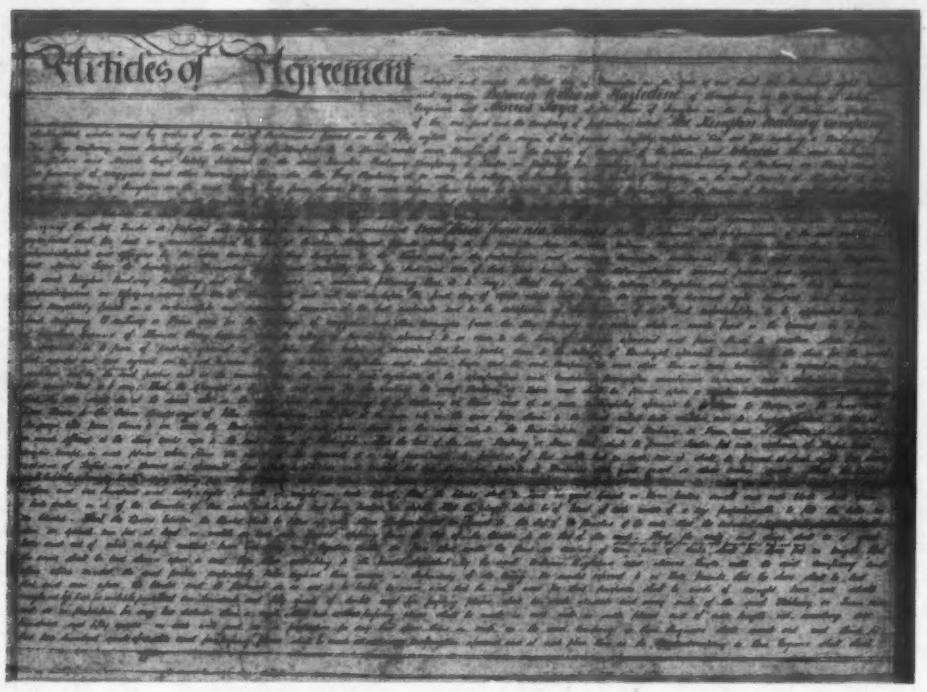
AN EARLY CONSTRUCTION CONTRACT

Railway Engineering in 1818

By C. R. CLINKER, President, Railway and Canal Historical Society

IT is often supposed, from lack of cohesive evidence, that the earliest railways were constructed in a rather rough and ready manner without proper detailed specifications. Photographs of them in their heyday are, of course, not available, and their plans and other records are either long since destroyed or so few as to make impossible anything like a complete picture.

There has recently come to light what is believed to be the earliest railway contract in existence. This


Articles of Agreement

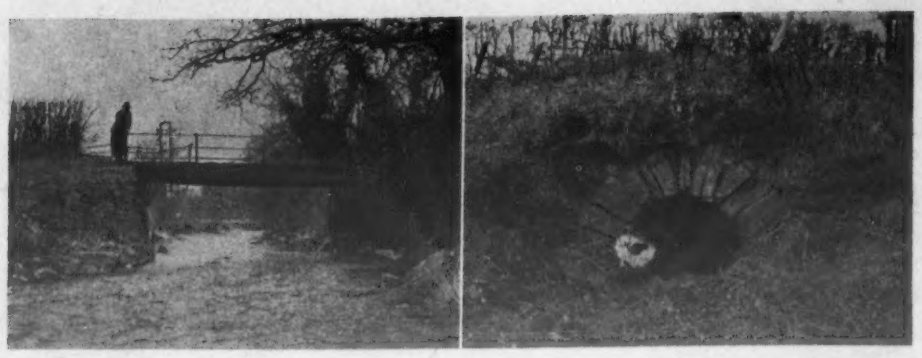
Reproduction of front page of original contract document of 1818 between the Kington Railway Company and its contractors

remarkable document, which is intact and in perfect condition, refers to the Kington Railway from Eardisley (Herefordshire), where it joined the Hay Railway, to Kington and Burlinjobb Lime Works, Radnorshire, 12¼ miles in all. The Kington Railway Company had been incorporated by Act of May 23, 1818, with a capital of £18,000. The contract, between the company on the one hand and William Hazledine and Morris Sayce on the other, was signed on November 1 following.

Hazledine was 55, the owner of foundries and forges at Shrewsbury and Plas Kynaston and one of Thomas Telford's assistants—"Merlin Hazeldine" as Telford nicknamed him. Sayce was 42, a civil engineer and surveyor, one of the promoters of the railway, born and bred in Kington, where he was much respected. He was the active partner, setting out the line and supervising the men.

Although there was a small foundry in Kington—it had been started in 1818 by John Meredith and is still standing, though used as a laundry—the rails and other ironwork for the railway were probably cast at one of Hazledine's works as being cheaper, despite cost of transport by road.

The contractors undertook to make the railway, complete in every detail, for £14,000, the work to



Waterloo bridge, of cast iron, carried the Kington Railway over the River Arrow near Kington and is still in good condition in 1958 although the railway has been out of service for so many years; right, culvert under Kington Railway embankment by the crossing of the Eardisley —Almeley road

be finished by April 1, 1820; it may be noted that the Company's Act allowed no less than 10 years for completion, but this may have been due to anticipation of financial difficulties. The line was to be made "in a workmanlike and substantial manner of the best materials and to the satisfaction of any Engineer of skill and respectability to be appointed by the Company." The engineer was John Hodgkinson, who had served under Benjamin Outram of Butterley Ironworks, Derbyshire; at this time he was engaged on similar work on the adjoining Hay Railway and other lines in South Wales.

Gradients and Roadbed

The gradients were not specified but left to the contractors, it being merely stipulated that they should be on a "regular inclination and declination" between named points. The bed of the railway was to be 12 ft. wide, exclusive of slopes and drains, and not less than 8 ft. where the full width could not be accommodated, the whole to be covered "not less than six inches in thickness with good gravel or stone broken small." Sleepers were to be of suitable hard stone, measured minimum 6 in. thick, 18 in. long and 12 in. wide, or the equivalent surface, weighing at least 168 lb. Each block had a hole 1¼ in. diameter and 4 in. deep, fitted with a plug of heart of oak.

Special attention was, of course, to be paid to the permanent way and ballasting. Rails, of the standard L-section tramplate design, were to be "of good Iron and not of white or high mettled Iron" each 3 ft. long and weighing 48 lb., including the cast-iron shoe or bearing plate under each joint. Evidently more than one pattern of shoe was submitted, for the contract specifies "the model upon which the parties respectively have signed their names." Emphasis was laid upon the necessity of placing the shoes firmly and evenly upon the stone sleepers "so as not to be liable to move." Wrought-iron securing nails were specified at five to the pound weight. When laid, the road was to be filled up level to the top of the rails with small stones or gravel and the outer side of the sleepers backed with the same material 2 ft. in width sloping from the top of the blocks to the road bed.

Gauge

The gauge of the Kington Railway is not mentioned in the contract, but it appears to have been laid to 3 ft. 6 in., the same as that of the Hay Railway with which it connected. It will be seen from the foregoing that the line was intended to be of first-class construction, although absence of the company's records makes it impossible to say whether it suffered from the enormous repair bills common to all early railways of this type or whether maintenance costs were reduced by initial solidity. The repairs bill of the Hay Railway, for example, was about £750 a year, over £200 of which was on account of broken rails, but contemporary evidence suggests that it was not so well built as the Kington Railway, despite the fact that it was also engineered, and later maintained, by Hodgkinson.

Profiting, no doubt, from the experience of other similar railways where insufficient passing loops had caused congestion and delay, the company specified two or three sections of double line in each route-mile, the total length per mile not to exceed 150 yd. At Kington a 200-yd. section of double line was required, care being taken to ensure that "the passing places shall be at a proper distance from the main road (line) so that the wagons . . . or their loading may not come in contact."

Drainage

However well constructed the road bed and track might be it would be useless without firm embankments and good drainage. The contractors were required to make the embankments 10 ft. wider at the base than at the top where the height was less than 3 ft., 20 ft. where the height was 6 ft., and so on in proportion. The underdrains were to be made "in a sufficient manner to withstand the pressure of the work thereon" and all water courses, millstreams, etc., preserved or diverted into new channels of the same capacity. The minimum size for culverts was 2 ft. 6 in. high and 2 ft. wide, with walls 15 in. thick, the whole "to be laid with good mortar made with proper sand and well burnt lime."

Bridges might be of iron, good hammer-dressed stone or bricks, at the discretion of the contractors, with good beds and joints set in mortar. The foundations were to be well grouted and detailed instructions are given as to width, wing walls, abutments and parapets. It is a remarkable tribute to the good workmanship put into the culverts and bridges that, 140 years later, there are still standing and in use one example of each type of construction. Waterloo Bridge, near Kington, formerly carried the railway over the River Arrow.

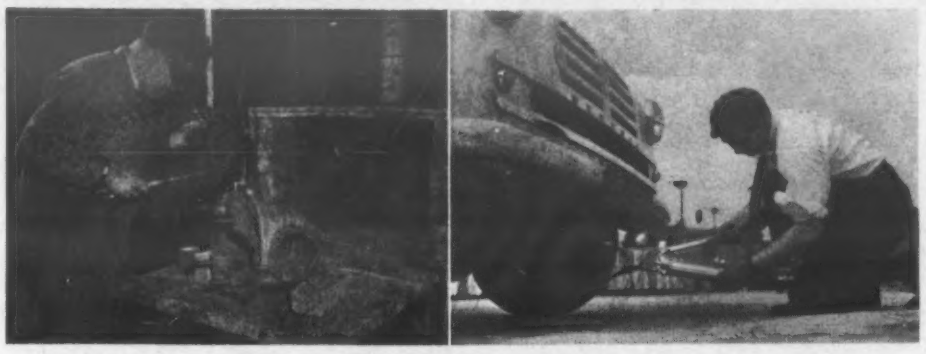
(*Continued on page* 13)

TRANSPORT SERVICE EQUIPMENT

Many New Items For Diesel Maintenance

COMMERCIAL MOTOR SHOW
Sept 26-Oct 4
EARLS COURT

COMPARED with the wing on the Brompton Road side of the first floor at Earls Court, which is apt to look rather congested with its great number of fairly small stands showing components and accessories, the wing on the Philbeach Gardens side has an air of spaciousness and provides more than ample room for live demonstrations of the many new items of transport service equipment. Probably the most noticeable developments in this department at the current show are widened ranges of more-versatile and less-costly diesel engine servicing equipment, new items for speeding up and improving tyre maintenance and the introduction of higher-capacity lifting equipment. Brief details of the interesting exhibits are given in the following paragraphs.

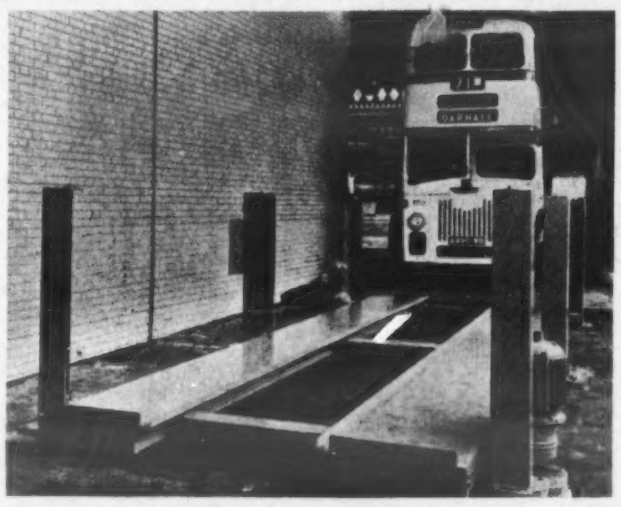


B.O.C. Saffire equipment in use by B.M.M.O. to repair an axle casing; right, new Nubrex multi-loading side-lever greasegun

Paint Spray Heaters

Heating paint for spraying provides a means of saving both time and material and the Aerograph Co., Limited, on **Stand No. 170** shows a number of both stationary and portable heaters that can be used with existing spray installations and standard guns. With a full range of Aerograph - De Vilbiss equipment a full-size car or van spray booth is shown which solves the problem of providing a dust-free atmosphere for painting in a crowded garage or workshop.

Armature Manufacturing Company shows a new heavy-duty test bench for starter motors for speeds up to 12,000 r.p.m. on **Stand No. 165,** while various improved Bowes Seal-Fast processes and plant for tyre repair on **Stand No. 159** include a new tubeless-tyre test tank named Aquarium. E. P. Barrus (Concessionaires), Limited, has the latest items of Duquesne tyre service equipment and the Hydra-speed giant-tyre remover on **Stand No. 155** in a display that includes also Blackhawk portable hydraulic tools and equipment.



New Laycock 12-ton vehicle lift with 25-ft. platforms and 8 ft. 9 in. clear entrance

Safer Electric Tools

The recently introduced additional safety factor for portable electric tools, the Bridges Neonic Eye warning light, can be seen on **Stand No. 191** in company with other of the company's useful tools and on **Stand No. 196** the various stages of the recovery and repair of worn and fractured vehicle components by British Oxygen Saffire equipment is demonstrated. A combined Saffire outfit that can be used for welding, cutting, gouging, flame washing and flame cleaning is also shown and the British Oxygen equipment service exchange scheme is illustrated. The very wide range of equipment displayed on **Stands No. 162 and 163** by Brown Brothers and Thompson and Brown Brothers includes diesel engine maintenance equipment, welding plant, electric hand tools, waste oil-burning heating equipment, spray guns and small hand tools. Recently introduced equipment shown on **Stand No. 157** by V. L. Churchill and Company includes a 1-1½ ton hydraulic floor crane and a motorised 50-ton hydraulic press and new items of Crypton equipment on **Stand No. 175** comprise the versatile Minitest electronic engine tester and a heavy-duty auxiliary starter for diesel engines. Useful lightweight diesel engine test equipment designed by Dunedin Engineering Company for use on the engine in situ in the chassis can be seen on **Stand No. 174.** An important exhibit on **Stand No. 156** in view of the higher speeds of operation of commercial vehicles is a new Dunlop static and dynamic wheel balancing machine suitable for tank reaches a safe level, thus eliminating waste and dangerous spillage when refuelling is carried out in a poor light.

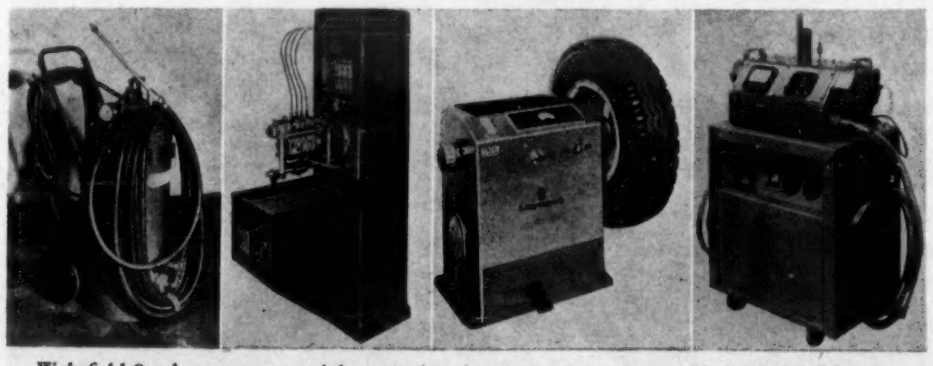
Engine Smokemeter

Important on **Stand No. 169** is a production version of the Hartridge smokemeter, which was recently approved by the Air Pollution Panel of the Motor Industry Research Association. Now in full production, the unit is shown with a trolley mounted charging unit and batteries and a mains-rectifier trolley, designed for use in garages, workshops or engine-test bays, where the smokemeter can be operated by battery or from a mains supply. Also on the stand is a Hartridge Major diesel test bench incorporating improved variable speed arrangement which now requires neither belt change nor clutch, and the Hartridge overflow system of calibration and electronic phasing. A heavy-duty test bench as supplied to British Railways Stratford diesel repair depot is also shown.

Air compressors of large and small capacity for garage and service station, the well-known 1-ton hoist are among the exhibits on **Stand No. 171** by Ingersoll-Rand Company. The many uses of the Impactool in applications requiring a rotary motion and particularly that of the size 534 unit in removing and replacing heavy wheel nuts are demonstrated. A number of useful new Britool and Jenbro hand tools, including various types of ratchet wrenches, is shown on **Stand No. 181** by Jenks Bros. New on **Stand No. 166** are a precision compression tester suitable for all popular diesel engines, a remote-control garage jack and a truck-mounted hydraulic lift table by Lawrence Edwards and Company.

Laycock 12-ton Lift

Laycock exhibits on **Stand No. 184** include the companys latest lubrication equipment for panel or covered hosereel service; Niagara-Merlin vehicle-washing plant; 30- and 60-ton hydraulic presses; Impactools and an air-operated 1-ton hoist are among the exhibits on **Stand No. 171** by Ingersoll-Rand Company. The many uses of the Impactool in applications requiring a rotary motion and particularly that of the size 534 unit in removing and replacing heavy wheel nuts are demonstrated. A number of useful new Britool and Jenbro hand tools, including various types of ratchet wrenches, is shown on **Stand No. 181** by Jenks Bros. New on **Stand No. 166** are a precision compression tester suitable for all popular diesel engines, a remote-control garage jack and a truck-mounted hydraulic lift table by Lawrence Edwards and Company.



Wakefield 9-gal. pressure vessel for spraying detergent mixtures; new Merlin R6 Calimaster; new Laycock-Hofmann wheel-balancing machine; extreme right, Hartridge smokemeter shown here with trolley-mounted battery charger

Air Speed tanks for pressurised cleaning with paraffin or detergent of vehicle parts; and a new 12-ton capacity vehicle lift and wheel-balancing machine. The vehicle lift, which has platforms 25 ft. long and a clear entrance 8 ft. 9 in. wide, can be securely rigged on six columns without excavation and is powered by two 5-h.p. synchronous electric motors. The new Laycock-Hoffman wheel balancer takes all types of commercial vehicle wheels and by recording the amount and position of unbalance enables the user to balance wheels within $\frac{1}{16}$ oz. A new bench-type sparking plug cleaning machine is shown by Lodge on **Stand No. 241,** and on **Stand No. 158** Thomas Meldrum shows a new folding 14-mm. plug spanner as well as strong lightweight stackable ramps and 12-ton capacity axle stands up to 50 in. high.

A new floor-mounted Calimaster, designated Model R6, is shown by Merlin Engineering Company on **Stand No. 189.** The machine will accom-

(*Continued on page* 13)

NEWS FROM ALL QUARTERS

Station and Branch Line Closures

Passenger-train service between Foxfield and Coniston (London Midland Region) will be withdrawn and Broughton-in-Furness, Woodland, Torver and Coniston stations closed for passenger traffic on and from October 6. The Scottish Region Lauder branch was closed to all traffic from October 1.

Line of Medway Motor Road

The Minister of Transport has fixed the line of the 25-mile motorway which is to be built to by-pass the Medway towns on route A2 from London to Canterbury and Dover, but the starting date on work has not been determined. Minor modifications only have been made in the published line of the motorway.

Pakistan—Afghanistan Links

Pakistan has signed a project assistance agreement with the International Co-operation Administration for aid totalling over £2 million for the improvement of Pakistani transport links with Afghanistan. A separate agreement along similar lines is being negotiated with Afghanistan. The programme includes improvement of the Pakistan North Western Railway, improved transit regulations for handling Afghan trade and road improvement and construction in Afghanistan from Kabul via Kandahar to the Pakistan border near Chaman. It covers also railway extensions from the Pakistan border to Spin Baldak and customs and goods transfer facilities at Spin Baldak.

Roadside Signs in U.S.A.

Standards for state regulation of outdoor advertising along the U.S. interstate highway system have been prepared in compliance with the Federal-Aid Highway Act of this year. Where completely new right-of-way has been acquired after July 1, 1956, the only signs permitted within "protected areas" (adjacent to and within 660 ft. of the edge of the right-of-way of all controlled portions) are: directional or other official signs; signs advertising the activities conducted on property on site; signs referring to a service or product sold within 12 miles thereof; information of specific interest to the travelling public, e.g. directions to beauty spots, facilities, etc. There are limitations on the maximum permitted size of advertising signs.

Helpers on Canadian Diesels

In Canada the Brotherhood of Locomotive Firemen and Enginemen has called for a re-negotiation of the rules covering the use of helpers on Canadian Pacific diesel locomotives. It seeks a new article requiring helpers drawn from the firemen's seniority ranks to be employed on all locomotives. This demand is in addition to a call for an 18 per cent wage rise and other improvements which the management are now considering. Its effect would be to require a helper on diesel locomotives in freight and yard service as well as in passenger service. The carrying of a second man on Canadian diesels has been in dispute between Canadian Pacific and the union for a long time and has already led to two strikes, the last in May this year.

Advertising on Blackpool Fleet

Meeting privately on September 24, Blackpool Town Council agreed to permit advertising on the outside of Corporation double-deck buses and trams. This is the first time that outside advertising has been allowed. The tender accepted provides £14,100 income for a five-year period.

Wider Coaches Allowed on Alpine Pass

A recent decision of the Swiss Federal Council authorises coaches from abroad with a maximum width of 8 ft. 2 in. to use the newly rebuilt and picturesque Martigny—Forclaz Pass—Le Chatelard road which connects the Lake Geneva and Valais regions with the French tourist centre of Chamonix.

City Buses with Two-Way Radio

Two-way radio is being installed in all 275 buses of the Rochester Transit Corporation in the United States, the first complete installation anywhere in the country. There will be two self-contained frequencies each serving half of the fleet, enabling bus dispatchers at headquarters to overcome the effects of traffic congestion or emergencies.

Sheffield Area Diesel Railcars

Diesel railcars are being introduced on certain train services between Sheffield and Doncaster in the Eastern Region. There is also one new train—the 12.38 p.m. from Sheffield Victoria to Doncaster, Scunthorpe and Cleethorpes. Railcars will operate the 6.20 p.m. from Sheffield to Doncaster, and the 8.27 a.m. Doncaster to Sheffield Victoria on weekdays only.

Ross Spur—Birmingham Road Link

The Minister of Transport has published a draft Order in respect of the proposed motorway in the West Midlands between the Ross Spur motorway and a point near Lydiate Ash, south of Birmingham; the route (now slightly varied) was established by an Order made in December, 1949. It will start north of Twyning in Gloucestershire, as an extension of the Ross Spur motorway (now under construction) and run north-east about 1½ miles; then turn northwards for about 26 miles, by-passing Worcester, Droitwich and Bromsgrove and terminating at Lydiate Ash, about 12 miles south of Birmingham.

Railway Road Vehicle Workshops

Construction has started on a new road motor workshop at Garrison Street, Birmingham, for the overhaul and repair of the large fleet of London Midland Region motor vehicles operated in and around the city. Since 1946 the fleet in this area has grown from 245 vehicles and 400 trailers to a total of 579 vehicles and 1,170 trailers. The new workshop will relieve the present main workshop at Saltley of some heavy overhauls. The workshop will be 200 ft. long with a single-span roof giving 100 ft. clear span. An overhead runway will be provided for the trailer and body repair section, which will also be equipped with power and other plant. Wall cranes will be provided for the chassis maintenance section, where there will be three service pits and one 8-ton vehicle lift. Separate bays are to be allocated for welding, tyre repairs, battery charging and also for a machine shop.

COMMERCIAL AVIATION

Comets Handed Over

POSITION OF B.W.I.A.

ON September 30 the de Havilland Comet 4 G-APDB, which was, in fact, the first of the type to receive its full certificate of airworthiness, was formally accepted by the British Overseas Airways Corporation. For good measure the manufacturer also handed over G-APDC and promised a third machine before the end of the week. The first aircraft was flown from Hatfield by the de Havilland chief test pilot, Mr. John Cunningham, and the party on board included Sir Geoffrey de Havilland (president) and Mr. Aubrey F. Burke (managing director) of the de Havilland Aircraft Co., Limited. The B.O.A.C. group was led by Sir Gerard d'Erlanger (chairman), Sir George Cribbett (deputy chairman) and Mr. Basil Smallpeice (managing director). Sir Gerard said that, much as he would like to, he would not give a date for the commencement of North Atlantic service with the Comets. To do this three aircraft would be needed and, as two were being handed over then and a third was promised by the end of the week, the date could not be far off. Training flights would commence on October 2 and by December 1 there would be a daily Comet service between London and New York. Mr. Burke said that performance of the Comet 4 was better in every particular than the specification.

B.O.A.C.-W.A.A.C. (Nigeria) Agreement

A 15 years' agreement was signed in London last week by Mr. Derek Glover, general manager, southern routes, on behalf of the British Overseas Airways Corporation, and Mr. R. W. C. Baker-Beall, chairman, on behalf of W.A.A.C. (Nigeria), Limited. Under the agreement, which took effect on October 1, W.A.A.C. (Nigeria), Limited, will charter aircraft from B.O.A.C. for carriage of passengers, mail and freight between Nigeria and the United Kingdom. Initially, the charter will consist of two Stratocruiser flights weekly between Lagos and London—one first class and the other part first and part tourist. The agreement undertakes that the aircraft on charter will be of the same type as those operated on the route by B.O.A.C. and it is planned to replace Stratocruisers with Britannias during the summer of 1959. It is also planned that the new company shall have parity of frequency with B.O.A.C. on the route within a year after the introduction of the Britannia. The charter aircraft will carry the name "Nigerian Airways WAAC" with a winged elephant painted on the front of the aircraft. All traffic revenue on the route from B.O.A.C. services and services chartered to W.A.A.C. (Nigeria) will be pooled. As previously announced, the Nigerian Government holds 51 per cent of the equity capital of W.A.A.C. (Nigeria), the remaining 49 per cent being divided between the Elder Dempster shipping company, which holds two-thirds, and B.O.A.C., which holds the remaining 16⅔ per cent of the capital.

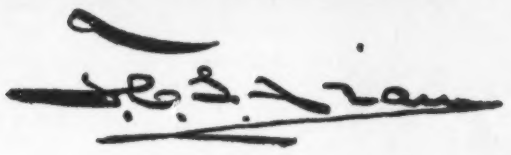
Noise of Jet Aircraft

The Boeing 707-120 of Pan American World Airways visited London Airport and also Stansted Airport on September 8 and 9, and the performance of the aircraft from the point of view of noise, ground handling and air traffic control was examined. Owing to the shortness of the trials it was not, however, possible to obtain all the data needed to establish the conditions under which the aircraft can be accepted on a regular service into London Airport and the Ministry of Transport and Civil Aviation has announced that the opportunity will be taken on the occasion of the aircraft's next visit early this month to carry out further tests. The conditions for those tests will be evolved with Pan American Airways but will be somewhat similar to those under which the airline is now operating in the second trial period at the Idlewild Airport, New York. These will include provisions that the operating techniques to minimise noise disturbance, which have been developed by Pan American Airways, will be used and that the aircraft should not fly on take off below 1,000-1,500 ft. above communities in the vicinity of London Airport. It is expected that the weight at which the aircraft will operate on its next visit will not exceed 22,000 lb. and that the flights will be made only during normal waking hours. Meanwhile, the airport authorities of New York, Paris and London are pooling the information obtained from successive trials at their various airports, and as soon as this work is completed the Ministry will discuss with the operators the precise conditions under which scheduled services may be allowed to begin. The de Havilland Comet 4 is also undergoing further tests at London Airport.

Future Role of B.W.I.A.

Recently representatives of the board of British West Indian Airways have been discussing in London with the board of B.O.A.C. Associated Companies the future role of B.W.I.A. and its relationship with B.O.A.C. Sir Errol dos Santos, chairman of B.W.I.A., presided over the B.W.I.A. members, and the board of B.O.A.C. A.C. was led by its chairman, Sir George Cribbett, who is also a member of the B.W.I.A. board. It was agreed that a primary function of B.W.I.A. was to provide inter-island services in the Caribbean and especially services of importance to the Federation. It should also be responsible for providing international services important to the economy of the British Caribbean islands linking the islands with neighbouring foreign countries, provided these services would be self-supporting. The policy of B.O.A.C. in the international sphere visualised that B.W.I.A. would be responsible for services between the Eastern Caribbean and New York, and B.O.A.C. would operate through services to Jamaica via New York, but these would not exclude B.W.I.A. operations between Jamaica and New York. The exceptionally high rate of losses being incurred by B.W.I.A. was considered to be mainly due to a shortfall of revenue owing to traffic failing to come up to expectations. It was agreed that plans for 1959 should be based on a fleet of five Viscounts and three Dakotas which would produce an available capacity of 17,131,848 capacity ton miles. Although the number of aircraft operated by B.W.I.A. is being reduced, owing to the discontinuance of B.O.A.C. charters, the amount of capacity offered on B.W.I.A. services is expanding. The expansion of B.W.I.A.'s effort in terms of capacity ton miles has been trebled since 1956 when the output was 5,217,000 c.t.m. Air Commodore G. J. Powell is continuing his review of the organisation and operations of B.W.I.A. and any plans for the future are subject to revision in the light of any recommendations he may make.

B.T.C. MEMBER RETIRES



Sir LANDALE TRAIN, C.B.E., M.C., M.I.C.E.

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As already foreshadowed in MODERN TRANSPORT, Sir Landale Train retired on September 30 from membership of the British Transport Commission upon which he had served for the past five years. Born in November, 1888, John Cumberland Landale Train entered the engineer's office of the North British Railway in Edinburgh as a pupil in 1908, when the late Mr. James Bell was chief engineer. He gained experience both in the office and outside on such works as the Portobello widening, the Thornton Leven widening and Arbroath Station reconstruction. In 1912 he accepted a post in London under his former chief, the late Mr. C. J. Brown, who had by that time become chief engineer of the former Great Northern Railway. Thereafter, as assistant engineer and then resident engineer, he had charge of the construction of the Tickhill Light Railway, the Kirkstead and Little Steeping Railway, the Hertford and Stevenage Railway, and Goods Way, Kings Cross. In August, 1914, he enlisted in the Royal Fusiliers, and was later given a commission in a field company, R.E. After being wounded in 1916, he was given command of the drafting company at the R.E. Depot, Newark-on-Trent. He returned to France subsequently and was awarded the M.C. in 1918 while in command of a field company, R.E. Demobilised in 1919 with the rank of major, he was, in 1921, appointed personal assistant to the chief engineer, G.N.R. Three years later he was appointed assistant industrial agent in the chief general manager's office of the London and North Eastern Railway, and was placed in charge of the works section of that office in 1925. In November, 1927, Mr. Train was appointed assistant to the chief general manager (works), and two years later he was transferred to Glasgow as district engineer, Western Section, Southern Scottish Area. In 1935, Mr. Train moved south to take up the appointment of assistant engineer (maintenance), Southern Area. His return north as engineer, Scotland, dated from the autumn of 1938, and his transfer to the Southern Area, L.N.E.R., in the same capacity was announced in July, 1941. In the following year he became chief engineer, L.N.E.R. He was a member of the Railway (London Plan) Committee, 1946-47. When the Railway Executive was formed in 1947 he became the member responsible for civil engineering, architecture, and signals and telecommunications and, as such, he covered many thousands of miles in inspections of all regions. He has been a member of council of the Institution of Civil Engineers and is a past president of the Permanent Way Institution and of the Railway Students Association. He received the C.B.E. in the Birthday Honours of 1952 and was knighted in the 1957 New Year Honours.

SERVICE PROBLEMS

Hopes of P.S.V. Operators

P.V.O.A. DINNER

SPEECHES were kept to a minimum at the customarily enjoyable annual dinner and dance of the Passenger Vehicle Operators Association which was held at Grosvenor House, London, on Monday of this week. The chairman of the national council of the association, Mr. F. J. Speight, who presided, proposed the toast of "The Guests," with which he coupled the name of the Minister of Transport and Civil Aviation, Mr. Harold Watkinson. Mr. Speight said that coach and bus operators were passing through a rather frustrating and not very profitable period. They might not always be in agreement with Ministerial actions but they could all congratulate Mr. Watkinson upon the energy, drive and power of decision which he had shown. Looking back over the past year or so there were some events to which reference must be made.

Although seemingly unconcerned by the provincial bus strike, in fact members of the P.V.O.A. had been greatly affected. They had striven to continue doing their normal and lawful work but employees and operators had been subjected to abuse and even physical violence. Then there had been the London bus strike. The pressure had reappeared even though that time it took the form of a threat to interrupt the supply of fuel. The association had taken vigorous action—Mr. F. A. Walker, the national secretary, being particularly active—and alternative sources had been found, but what was unsatisfactory was that these threats and this interference could arise.

Decrease in Traffic

Another problem was the fall in traffic on both bus and coach services. The situation in rural areas with their light traffic routes was becoming increasingly critical. Most operators did not feel that the 12-seat vehicle was the answer, whatever the Minister might say. As had been strongly represented in the appropriate quarters there was still a strong belief among operators that these small units might well do harm by undermining the profitability of private hire by which maintenance of so much regular operation was supported. In fact the apprehensiveness of operators remained even if Parliamentary feelings had been appeased. The railways, Mr. Speight felt, were receiving very exceptional long-term Government support. At the same time their competitors were still overburdened with a fuel tax of 2s. 6d. a gallon, whereas the railways were using increasingly diesel fuel which was untaxed. The P.V.O.A., in conjunction with the other associations, had done its best to achieve a change in the situation. Whatever might be thought of Government inaction on that score, it was possible to welcome its more liberal outlook as regards speed and to look forward hopefully to the removal or at least to the raising of the speed limit.

In his reply Mr. Watkinson said that, as a long-lived Minister of Transport so far as a Conservative administration was concerned, he could refer with some satisfaction to the road programme under which 1,000 miles were at present being built. He was happy, and it was the first time that he had been able to accept the P.V.O.A. invitation, to be in the seats of private enterprise. He gathered that one member had operated coaches to Moscow. That was indeed flying the flag of private enterprise in the centre of advocacy of state control. There was certainly a place for such enterprise in the transport industry. He knew that there were people who felt that the last Transport Act had not gone far enough, but it should be realised that it represented a thoughtful attempt to balance the benefits of public and private ownership and to obtain the best results from their combined effort. One aim had been to stabilise the industry in a form in which it could no longer be subject to politically impelled changes. Unfortunately the Labour Party seemed not to have learned at all and still wanted to put the clock back and carry out further nationalisation.

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STANDARD VAN RANGE

(*Continued from page 5*)

prototype of the new van over more than 6,000 arduous miles. For three weeks early this year, a team of five test drivers made its headquarters in a small Spanish town and set out each morning for a daily run of 300 miles. The test route covered a variety of road conditions. Roads with pronounced corrugations, setting up vibrations likely to break all but the toughest front suspensions, dirt roads with deep potholes, filled with water after heavy rain, and mountain roads were all in a day's work to the testers, and the van was driven at extremely high speeds to show up any possible weaknesses.

Results of Tests

A variety of different payload weights, driving speeds and driving techniques was permutated to see how the van would behave in conditions many times more difficult than a production vehicle would encounter in normal use. The test circuits included one road which climbed continuously for nine miles up the mountains, and by making this climb with a heavily laden van, the testers were able to collect valuable data about cooling and carburation. Barcelona provided excellent heavy traffic conditions for test purposes.

Despite harsh treatment during the tests, following extended testing over the pave circuit at the M.I.R.A. proving ground, the van stood up well to the treatment it had received and increased the engineer's confidence in the original design. Certain items did show weakness and steps were taken to modify them in the light of experience. As an example, experience over the dust roads pointed to the advisability of fitting an oil-bath air cleaner to production models to be used in export markets.

Reductions in flight times of between 6¼ and 9 hr. are being made in the schedules of the British Overseas Airways Corporation between London and Nairobi which start on October 5. On these services Britannia 312s will replace Argonaut aircraft. The fastest of the new services, London to Nairobi via Rome and Khartoum, will consist of one flight in each direction weekly. The aircraft will leave London at 15.45 on Saturdays and will arrive at Nairobi at 10.15 local time the following day. On the return flight the Britannia will leave Nairobi at 19.45 on Sundays and will arrive at London the next day at 09.05. The other service, which includes an additional stop at Entebbe, will leave London on Thursdays, Fridays and Sundays and Nairobi on Mondays, Fridays and Saturdays.

SHORT SEA ROUTE PORTS

8—*Weymouth**

By HENRY REES, Ph.D., M.Sc.(Econ.)

WEST of Lulworth Cove, in South Dorset, the chalk hills recede from the coast, leaving between them and the sea a triangular lowland formed largely of clays of Jurassic age. This area, only a few square miles in extent, is drained by the small Dorsetshire Wey, and at its mouth stands Weymouth. The town lies near the centre of a gentle arching of the rocks; after countless ages of weathering the summit of the upfold has been removed, so that while the rocks of the Weymouth area itself consist of Oxford clay, these are covered both to the north and south by younger but harder grits of the Corallian beds.

The soft Oxford clay is easily attacked by the sea and has been eaten away to produce the smooth, sweeping curve of Weymouth Bay, one of the finest sandy bays in the whole of the South Coast. It is bounded at each end by Corallian grits, which form the cliffs and headlands at Redcliffe Point on the north and Nothe Point on the south.

Early Settlements

Slight sinking of the land in geologically recent times has drowned the lower reaches of the Wey, forming the once tidal Radipole Lake, and providing a depth of water adequate for seagoing vessels at the mouth of this tiny river. Radipole Lake is now cut off from the tides and has been transformed into an ornamental stretch of water with a swannery containing several hundred birds; but it confines the town to a narrow peninsula hemmed in between the lake to the west and the sea to the east.

The seaside habit first became fashionable in the middle of the 18th century, and Weymouth was among the earliest resorts to welcome visitors. Here in 1763 the residents were amazed to see Ralph Allen of Bath, inventor of the bathing machine, immersing himself in the open sea with the aid of this extraordinary contrivance. Towards the end of the century George III, after a long illness, visited Weymouth with his queen. The royal family returned there several times and its reputation was well established.

Small Tidal Range

Several fortunate circumstances have aided the growth of the cross-Channel trade. Weymouth is the nearest English port to the Channel Islands (Guernsey is 75 miles away) and it shares with Poole the distinction of being the port closest to Normandy (Cherbourg too is 75 miles distant). There is a depth of at least 15 ft. of water at spring tides as far as and beyond Weymouth Bridge, so that vessels of almost 2,000 n.r.t. can use the harbour at high tide, and 500 tons at low tide. Finally, Weymouth has an exceptionally small tidal range—perhaps the smallest in the whole country: even at spring tides the rise is only 7½ ft., and at neap tides it is a mere 4½ ft.

The first regular packet services based on Weymouth were introduced in 1806, when two naval cutters, each of 85 tons, sailed to Guernsey and Jersey alternately on Saturday evenings. They carried passengers and mails and required 2½ days to complete the journey which now takes 6 hr. Paddle steamers made their appearance in 1827. The railway reached Weymouth a generation later (1857), and in the same year the Weymouth and Channel Islands Steam Packet Company was formed, operating a service four times weekly. Yet the arrangements for disembarking at Weymouth remained primitive: there was the old North Pier, with its solitary crane, but the present harbour did not exist. The steamer made fast to a buoy in the open roadstead, and cargo and passengers were transferred to small boats, to be rowed ashore.

Links with France

Attempts have been made in the past to establish direct connections between Weymouth and the Continent; but they have proved short-lived. In 1878 a paddle-steamer service to Cherbourg was introduced, but it lasted only seven years. Apart from the passenger traffic, flowers and wines moved inward, while outward cargoes included fish, general goods and thousands of tons of drainpipes for Paris. A weekly service to Nantes was tried in 1909, but was withdrawn after two years. Today there is no through passenger service to France, though one may enjoy the charms of Brittany through St. Malo by changing at Jersey or Guernsey. But a flourishing goods traffic has developed between Weymouth and Normandy and Brittany in addition to that with the Channel Islands. From the Continent come wines, dairy produce and vegetables, while tomatoes and early potatoes arrive in quantity from the Channel Islands.

Weymouth Bridge—an electrically operated bascule bridge—divides the harbour into an upper and a lower reach. Above the bridge the water shallows to 8 or 10 ft. at low water spring tides, and this section is used by pleasure craft, fishing boats and coastal vessels. The Channel Islands steamers are berthed below the bridge on the north side of the river. The southern side of the harbour entrance was largely protected by nature owing to the resistant rocks at Nothe Point; but a pier was necessary on the north side to prevent the encroaching of drifting sand from that direction. The original Pile Pier dates from 1840, but has been rebuilt and lengthened. Those on pleasure bent use the north side: the needs of commerce and travel are satisfied on the south side. Here are the platforms, restaurants and customs sheds

The port of Weymouth

of the passenger terminal, with berths for three cargo vessels, two excursion steamers and a packet steamer. The cargo traffic at these and other quays is handled with the aid of nine electric cranes ranging in capacity from 1½ to 5 tons.

Port Trade

In 1954 the total foreign trade of Weymouth amounted to almost exactly £11 million, divided equally between imports and exports. The chief import by far was tomatoes, which were valued at £4 million; in addition £850,000 of cut flowers entered, together with £155,000 of refined petroleum (the Esso Petroleum Company has an oil depot in the port). Smaller overseas imports included potatoes, grapes and preserved peaches. Outward cargoes consisted chiefly of manufactures: first (as is quite usual in this country) were road vehicles, valued at £347,000; and there followed chemicals, milled wheat and animal feeding stuffs; but the post, at £2,425,950 was by far the chief export by value. During the summer there is a daily (afternoon) sailing to Guernsey and Jersey for passengers, with, on Saturdays, an additional vessel to Jersey only. The voyage from Weymouth to Guernsey takes 4½ hr.; thence to Jersey takes another 2 hr. Cars may usually be brought on the passenger steamers except at weekends during the summer, when they are shipped on the cargo steamer. The rates are the same as those on the Dover—Calais route, though the distance involved is between three and four times as great.

Two large new passenger ships have been ordered for the Channel Islands route and are expected to be in service in 1961. Each will be of about 3,800 tons gross—twice as large as the *St. Julien* and *St. Helier*, which they will replace. Each will accommodate 1,400 passengers; there will be 25,000 cu. ft. of cargo space and room on each for 18 cars. At present the passenger traffic at Weymouth is well below that at the other cross-Channel ports; but the British Transport Commission is convinced of the growing popularity of the Weymouth route to the Channel Islands and confidently expects an expansion in its trade. *

* No. 7 appeared August 2.

OFFICIAL NOTICES

PORT ELIZABETH ELECTRIC TRAMWAY CO., LIMITED

GENERAL MANAGER

THE Port Elizabeth Electric Tramway Co., Limited, invite applications for the position of General Manager. The Company and its associates operate a fleet of approximately 200 diesel buses in the Port Elizabeth area.

Applicants should have experience in the administration and control of passenger transport services.

Salary: £2,500 per annum, inclusive of cost-of-living allowance.

A motor car will be provided.

First-class passage to Port Elizabeth for successful applicant and his family will be provided.

Applications, giving full particulars of qualifications, testimonials, age, experience, etc., should be delivered not later than 12 noon, October 14, 1958, to:

The Secretary, London Office,
Cape Electric Tramways (1949) Limited,
4 London Wall Buildings,
Blomfield Street,
London, E.C.2.

COUNTY BOROUGH OF READING

DEPUTY TRANSPORT MANAGER AND ENGINEER

APPLICATIONS are invited from candidates suitably qualified for the above appointment. Wide experience in engineering and traffic operation is necessary; the salary is at the rate of £1,340 x £36—£1,520, but a commencing salary higher than the minimum for the post may be paid to a suitable candidate. Further particulars and forms of application may be obtained from the Transport Manager and Engineer, Reading Corporation Transport, Mill Lane, Reading. Applications endorsed "Deputy Transport Manager and Engineer," should be sent to me not later than noon on Saturday, October 18, 1958.

Town Hall, Reading. G. F. Darlow, Town Clerk.

NIGERIAN RAILWAY CORPORATION

CARRIAGE AND WAGON SUPERINTENDENT

THE Nigerian Railway Corporation invites applications for the following post:

Carriage and Wagon Superintendent

Duties: the officer will be responsible to the Chief Mechanical Engineer for the maintenance of carriage and wagons and will be required to take full charge of carriage and wagon workshops and depots.

Qualifications: candidates must have considerable experience of managing carriage and wagon workshops on a railway of standing and must be corporate members of the Institution of Mechanical Engineers.

Salary: £2,350 per annum. The appointment on contract will have a gratuity payable on completion at the rate of £39 3s. 4d. for each completed month of service.

Tours: 15 months in Nigeria followed by 15 weeks' leave on full pay.

Quarters: partly furnished quarters are provided at low rental.

Allowances: there are attractive family, travelling, transport and other allowances.

Send postcard before October 21, 1958, mentioning the post and this paper for further particulars and application form to:

The London Representative,
Nigerian Railway Corporation,
Nigeria House,
9 Northumberland Avenue,
London, W.C.2.

COMPONENTS AND ACCESSORIES

*Novelty in Wide Range for Commercial Vehicle Industry (Cont.)**

NOW a member of the B.S.A. group, **Hobbs** Transmission, Limited, on **Stand No. 393,** shows the latest version of its mechanical automatic transmission. Fully automatic operation is by built-in hydraulics and traction is maintained during changes from one ratio to another. The unit can provide four or more ratios with manual override for each gear position. Although the gearbox exhibited is suitable for up to 90 lb./ft. torque only, a range of designs with capacities of up to 1,000 lb./ft. input torque is available.

New on **Stand No. 390,** occupied by **Key-Leather** Co., Limited, is a 33-in. long Clearview electric demister, which has a consumption of 70 watts at 6 or 12 volts and can be bent to fit snugly on to any shape of curved windscreen or window. A useful accessory on the stand is the KL Motorair ventilator fitted with a reversible motor enabling it to draw in fresh air or expel stale air as required. The comprehensive range of KL components and accessories shown includes the Eventemp radiator blind, various switches and gauges, new sizes of the Type 10,000 combustion heater and additional petrol-burning types, interior heaters developed specially for ambulances and trolleybuses (the latter in co-operation with Metropolitan-Cammell Carriage and Wagon Company) and the extremely efficient KL Norway commercial vehicle heater, which has recently been adopted by A.E.C. for its Mammoth and Mercury ranges.

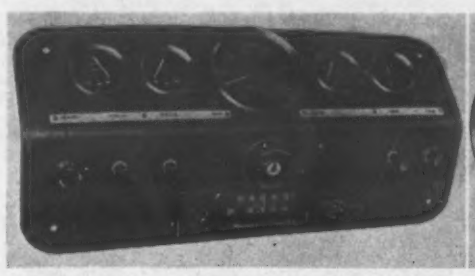
Stand No. 241 carries a range of **Lodge** components, including platinum-pointed sparking plugs which are efficient over a very wide heat range and provide long and trouble-free service. Various spark-ignition accessories include terminal covers with integral suppressors and diesel-engine heater plugs are also on view.

Adjacent **Stands No. 250 and 249** carry full ranges of electrical and other components by the electrical and sales and service companies of the **Lucas** organisation. New items displayed include a rear lamp for overhanging loads, flush-fitting long-range fog lamps for 12 or 24 volts, a 24-volt illuminated switch and a hinged commercial vehicle mirror. Lucas displays include an animated demonstration of petrol-injection equipment for commercial vehicles; demonstrations of the new long-range and fog lamps, flashing indicators and control equipment and electric screen-washing units; a range of light- and heavy-duty batteries; and examples from the B90 service range; the overhanging-load rear lamp set, which has been introduced to meet regulations which came into force on October 1, comprising a lamp, a hard rubber bracket, a webbing strap for securing to the load and cable and plug.

The new illuminated switch is a 24-volt version of a 6- or 12-volt combined switch and warning light introduced earlier this year to meet the requirements of reversing-light regulations, which require an internal light to show when this item is switched on, but its use is advantageous with various other electrical accessories where a reminder that the service is on is desirable. The Lucas petrol-injection equipment on view is the result of intensive development and design work and will now meet the requirements of four- to eight-cylinder engines running up to 6,000 r.p.m., working accurately and reliably with completely automatic control from cold starting through the warm-up stages. The company also illustrates its four-head-lamp system, which provides optimum meeting and driving beams unrestricted by the compromise necessary with conventional two-lamp systems.

Stand No. 378 features several new **Meadows** units, including a 165-b.h.p. diesel engine with matched five-speed gearbox, a turbocharged version of the 630-cu. in. engine and established units with higher running speeds and outputs. The new diesel, designated 6DC700, is a six-cylinder direct-injection unit of 5.118 in. bore and 5.63 in. stroke.

(*Continued on page* 12)



Smiths all-electric instrument panel as fitted to Leyland and Albion new vehicles; right, Hobbs fully automatic mechanical gearbox shown without its casing

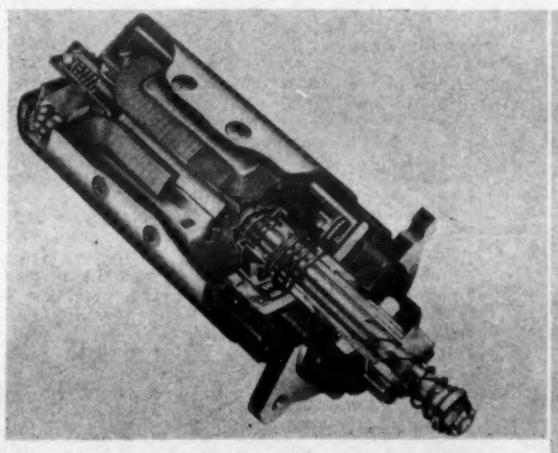
* The first part appeared in our last issue.

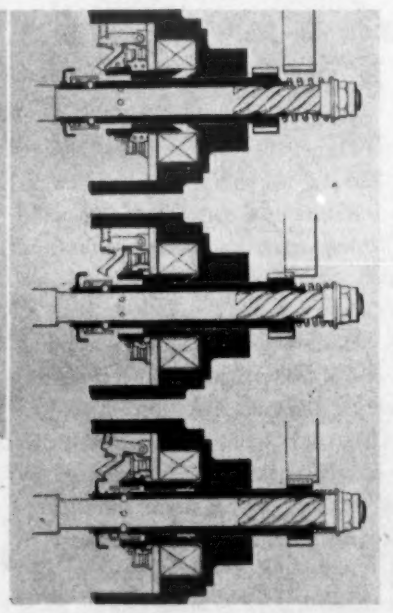
New Starter Motor

C.A.V. CO-AXIAL UNIT FOR DIESEL ENGINES

INTRODUCED at the Commercial Motor Show by C.A.V., Limited, is a new starter motor, the CA45, a 4½-in. diameter machine designed to provide a relatively cheap starter with a high performance. It is suitable for cranking multi-cylinder high-compression diesel engines of the order of 5 to 7 litres capacity, but the design has enabled more power to be obtained than is developed by the larger BS5 axial unit now in extensive use.

The CA45 is an entirely new design, incorporating several special features. Essentially, only the pinion moves axially into engagement; there is no longitudinal movement of the whole armature assembly, as in the axial types. This dispenses with the need for shunt windings and permits the machine's magnetic field to be utilised to maximum efficiency. The movement of the pinion is effected partly under the action of a solenoid carried co-axially with the shaft and partly by means of a helix on the shaft and pinion. Engagement of the pinion is made in two separate but continuous stages, thus avoiding the possibility of damage. A locking device prevents premature ejection of the pinion which might occur with spasmodic engine firing during starting.





Cutaway view of the CA45 starter to show details of construction and, right, stages of pinion engagement—at rest (top), just engaging and starting to slide on helix (centre) and fully engaged and held by ball locking device with main contacts closed

Operation

The engagement of the starter is accomplished in an entirely different manner from that used with previous types. On pressing the starter switch, the solenoid is energised and the pinion begins to move axially forward. At the same time, a first set of moving contacts closes, and current, limited by a resistance, is passed through the windings, causing the armature and pinion to rotate slowly until the pinion and flywheel teeth begin to engage. As the engine flywheel prevents the pinion from further rotation, the pinion is forced forward into full engagement by the action of the helix on the shaft. Just before the axial movement is completed, a trip switch, operated by a collar on the pinion sleeve, short-circuits the resistance to admit full current to the windings to crank and start the engine. Thus, cranking cannot commence until the pinion is fully engaged.

There are four steel balls located in holes in the pinion sleeve that normally rest on the armature shaft. When the pinion reaches the fully engaged position, the balls drop into dimples in the shaft and are locked in this position by a sleeve which rides forward over them. The pinion sleeve cannot move out of engagement until the balls are released; this can only occur when the starter button is released when the pinion sleeve is free to retract; a light spring assists retraction and holds the pinion in the at-rest position.

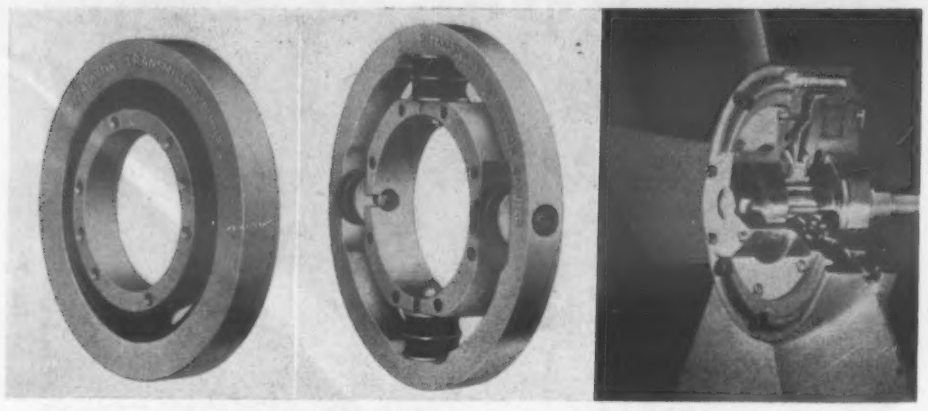
On occasion, badly worn pinion and flywheel teeth may lock face to face, preventing engagement. Special provision is made for overcoming this difficulty. The armature shaft is spring loaded at the commutator end, allowing an axial movement of approximately $\frac{1}{16}$ in. Should the pinion fail to engage, the shaft will slide back and turn in the helix to a slightly different position. On making a second attempt, the teeth should engage without difficulty. Before the CA45 starter was introduced into actual service it was subjected to exhaustive tests designed to simulate the conditions of severe abuse often encountered in service and many were subjected to road trials. Subsequent examination revealed that the CA45 was suitable for a wide variety of operating conditions and that a long life between overhauls could be expected.

Components and Accessories

(*Continued from page 11*)

From its 696-cu. in. (11.38 litres) swept volume it develops 165 b.h.p. at 2,000 r.p.m. and a maximum torque of 470 lb./ft. at 1,200 r.p.m. Features include automatic variable fuel-injection timing and external dimensions similar to the existing 6DC630 engine, with which it employs many common major components.

lb./ft. torque at 1,400 r.p.m. The new 6DC5630 equipped with Holset-Schwitzer exhaust-gas turbocharger is designed to provide high specific power. With a weight of 1,900 lb. with flywheel but less electrical fittings, it is set to develop 185 b.h.p. at 2,000 r.p.m. and a maximum torque of 540 lb./ft. at 1,400 r.p.m.



Two types of Metalastik transmission damper and, right, Smith's magnetic-particle fan coupling operated by thermostatic switch in bottom tank of radiator

Increases in maximum b.h.p. have been obtained in all established normally aspirated engines at 100 r.p.m. higher than previous settings and in some cases there is also an increase in maximum torque. The new settings are 6DC630, 145 b.h.p. at 2,000 r.p.m. and an increase to 430 lb./ft. torque at 1,200 r.p.m.; 6DC500, 150 b.h.p. at 2,500 r.p.m. and 360 lb./ft. torque at 1,400 r.p.m.; and 4DC330, 100 b.h.p. at 2,500 r.p.m. and 240

A major feature of **Stand No. 338** is a range of **Metalastik** flexible bearings for every type of chassis suspension including a number of exclusive designs. Among these is a heavy-duty cone bush, which is stiff axially and radially but relatively free in torsion (for independent front suspension); the Spherilastic bearing which permits universal movement between members carrying heavy radial and axial loads; heavy-duty shackle pins with applications in independent suspension systems as well as in conventional leaf springs; and the unique Ultra-duty bush for leaf springs and radius and Panhard rods in lighter vehicles. The successful Metalastik front and rear rubber suspension units for commercial vehicles (which have covered many million miles in Midland "Red" buses) are shown as are various engine, body, cab and radiator mountings, crankshaft and transmission dampers, flexible couplings and bonded rubber-metal spring buffers.

A comprehensive range of **Oldham** batteries is shown on **Stand No. 366** in company with battery booster plugs and sockets and special-purpose terminals. The Oldham range includes the double-sleeve multi-tube Pg. design for bus batteries and the Demi-Armoured flat-plate unit, both of which are shown in sectioned form, and a special version of the Power range developed to provide high performance with light weight for buses.

Perkins Debutantes

Among the range of **Perkins** diesel engines exhibited on **Stand No. 442** is the unit developed by the company for American Ford to power its F600 chassis. The Perkins engine, designated F340, has bore and stroke of 4 in. by 4½ in., giving a displacement of 339.3 cu. in. (5.56 litres) from which it develops 110 b.h.p. at 2,850 r.p.m. and 240 lb./ft. torque at 1,700 r.p.m. Features include a bigger version of the C.A.V. AA fuel-injection pump, automatic variable injection timing, hydraulically operated automatic timing chain tensioner and an altitude control.

Other new Perkins diesel engines on the stand are the C305—an 87-b.h.p. six-cylinder unit for underfloor fitting seen installed in the new Commer-Karrier forward-control range and described in our issue for September 20—and the Four 99, a four-cylinder 1½-litre engine developing 43 b.h.p. at 3,600-4,000 r.p.m. which powers a Trojan van and Beardmore taxicabs elsewhere in the show.

A representative range of **Dagenite** batteries shown by Peto and Radford on **Stand No. 242** for commercial vehicles incorporates negative plates containing a special paste developed to eliminate winter starting troubles. The display includes the Shednought series, which are assembled in monobloc containers, the high-performance lightweight range developed for buses, and the TPG range employing Porvic synthetic separators.

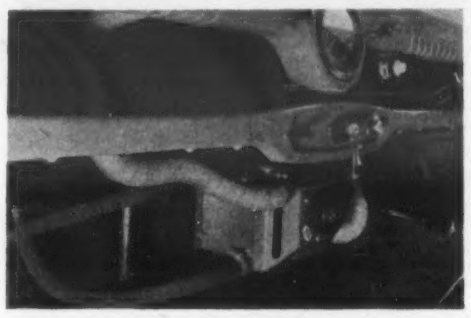
The wide range of fire safety equipment shown by the **Pyrene** Company on **Stand No. 417** covers all classes of passenger and goods vehicles, garages, service stations, plant and equipment. It extends from hand and portable extinguishers to mobile units and fixed installations and covers types using C.T.C., C.B.M., foam, powder and CO_2. The remarkable Pyrene pump-operated extinguisher, which has been recognised as the standard fire protection for motor vehicles of all kinds for over 40 years and of which more than 18 million have been supplied, still features prominently on the stand in pint and quart sizes and these are now joined by pressure-operated units filled with the Pyrene liquid or chlorobromomethane.

Additions to the **Romac** range of accessories shown on **Stand No. 214** include swivel-stem replacement inner tube valve stem and base which has the useful feature of ability to swivel the stem through 360 deg. after the valve has been tightened down, making for easy insertion in the rim.

Improved Scammell Coupling

An improved type of **Scammell** MH semi-trailer coupling gear is to be seen on several makes of tractor at the show as well as on **Stand No. 83** on the maker's vehicles. Its main features are the substitution of servo motors to effect uncoupling and for the independent application of the trailer brakes, thus relieving the driver of physical effort in these directions and cleaning up the cab by the replacement of heavy mechanical levers and links by small servo triggers.

An opportunity to study the parent of all the successful British automatic and semi-automatic commercial vehicle transmission systems is afforded



Neat installation of Key-Leather Norway heater in Austin diesel 5-tonner

on **Stand No. 310**, where **Self-Changing Gears**, Limited, shows a range of its equipment developed round and based on the Wilson epicyclic gearbox. Exhibits include the company's VS automatic control equipment; the RV30 eight-speed gearbox with finger-tip semi-automatic control for heavy-duty goods vehicles and tractors; a fluid-friction clutch which combines the smooth take-up of the fluid flywheel with the positive drive of an integral centrifugal friction clutch; a hydrodynamic torque converter, which the company manufactures under a Schneider licence; and a four-speed oil-operated semi-automatic (two-pedal) control.

Small and Parkes, Limited, shows a full range of **Don** brake and clutch linings on **Stand No. 264** in both woven and moulded materials, as well as the company's well-known V belts, bonnet tapes, radiator hose, jointings and packings and load-securing straps. Prominently featured are the patented Donflex clutch discs and replacement Borg and Beck clutch and Lockheed and Girling brake servicing units lined with Don friction materials, while a number of items in the newer sintered-metal friction materials are shown.

All-Electric Instruments

A number of new items appear on **Stand No. 251**, where the extremely comprehensive range of **Smiths** motor accessories is on view, while the associated **K.L.G.** company products, including platinum-pointed sparking plugs and single- and double-pole heater plugs for diesel engine starting are on **Stand No. 336.** New Smiths items include an instrument panel with all electrically operated instruments (seen fitted on new Leyland and Albion vehicles); new cab and coach heaters, the latter with the high heat output equivalent of 5½ kw.; and a magnetic particle fan coupling (working on the same principle as the Smiths magnetic clutch for automatic transmission systems) which is controlled by a thermostatic switch in the radiator bottom tank ensuring that the fan only operates and absorbs power when the coolant temperature warrants it.

Simmonds accessories on **Stand No. 343** include that company's well-known ranges of standard nuts and bolts, self-locking nuts and Spire speed nuts and a comprehensive range of Fram bypass and full-flow oil filters and replacement cartridges. A working rig demonstrates the useful Fram fuel filter-separator unit.

Demonstrations of heavy-duty windscreen wiper operation on large screens of various proportions and curvatures form the basic display by **Trico-Folberth** on **Stand No. 300.** Equipment for compressed air, vacuum and electric operation is shown together with heavy-duty flashing indicators and air-operated horns.

Steam-Proof Windows

Special prominence is given on **Stand No. 332** to examples of the new **Triplex** electrically heated backlights, which are designed to prevent the loss of rearward view due to the icing or steaming up of back windows. This new type of laminated safety glass can be used in any side or rear window; it embodies a heating element of extremely thin wires embedded in the laminations which draws its power from the vehicle battery.

Weathershields exhibits on **Stand No. 226** include three new items, namely a standard-size three-way-lift roof ventilator; a roof ventilator with provision for instantaneous release from inside or outside, which provides an additional emergency door as specifically required in some Continental countries; and a combined baffle and control panel for interior fitting with the Flomatic ventilator.

Of great interest on **Stand No. 407** is the new electro-pneumatic control equipment for trailer braking developed by **Westinghouse** Brake and Signal Company (a description of which appeared on September 20). There is a working exhibit on the stand demonstrating the advantages of the system. Another working exhibit is arranged to show the use of a typical Westinghouse levelling valve for use with air suspension systems; the load can be varied manually to show the action of the valve in maintaining a constant chassis height.

A complete range of Westinghouse equipment for commercial vehicle air-pressure brakes is shown and the display is completed by a typical column-mounted pneumatic steering servo and examples from the company's range of battery-chargers.

TRANSPORT SERVICE EQUIPMENT

(*Continued from page 7*)

modate distributor and in-line pumps of up to six cylinders of all popular makes and incorporates infinitely variable speed range between 80 and 2,500 r.p.m., Merlin patented electroscopic phasing, master test injectors and other equipment. The company also introduces a new (Model R2) Servicemaster precision grinding machine for dealing with the injectors of the popular makes of smaller diesel engines and demonstrates the patented electroscopic phasing system.

Injector Testing

Morris and Ingram shows the new Meter-Mite injection-pump test bench and Handflap injector service tool on **Stand No. 152.** The range of Nubrex lubricating equipment on **Stand No. 282** includes a new multi-loading side-lever greasegun and a new heavy-duty Davenset battery charger is included in a display of kindred Partridge, Wilson products on **Stand No. 198.**

Among the numerous tyre service tools shown by Stenor, Limited, on **Stand No. 182,** which includes valve replacement equipment, tyre spreaders, electric vulcanisers and heaters, bead expanders and a test tank for tubeless tyres, is a new tool named Bead-Eeza for breaking the seal between bead and rim without risk of damage. The company also shows Wandess cylinder boring bars and brake and clutch lining riveting machines, Surform hand-surfacing tools and a range of Startall engine-starting and battery-charging equipment. New on **Stand No. 173** is an edge-type filter by Stream-Line Filters, Limited, designed to remove solid particles down to 1 micron from diesel fuel oil.

Tyre Servicing

Tyresoles, Limited, on **Stand No. 150** shows its new tread ring for producing the Standard Giant tread for commercial vehicle tyres, as well as a representative selection of equipment used in the Tyresoles patented process for the reconditioning and repair of worn tyres. U. S. Autowash Company features a recently introduced platform with built-in guardrail for brushing vehicle roofs on **Stand No. 151** together with other recent developments in Washmobile equipment. Recent modifications carried out to Tip Top Vulcanising Products tyre service equipment, which have added to its versatility and ease of operation are demonstrated on **Stand No. 431.**

Among the new items on **Stand No. 185,** occupied by C. C. Wakefield and Company and covering just about every need in lubrication servicing equipment, are a floating grease pump for dealing effectively with lithium-based and other non-self-levelling greases and a sprayer designed for cleaning the undersides of vehicles that can be used for the application of any air-liquid mixture.

Cleaners

On **Stand No. 146** a wide range of Weaver equipment includes a new automatic fuel filler nozzle and recently introduced portable and rail-type headlamp testers and **Stand No. 199** carries the recently introduced New Welbeck Floormaster industrial suction cleaner for large floors as well as the useful Bak-Vak portable cleaner light enough to be carried on the back for reaching otherwise inaccessible places. Wolf Electric Tools, Limited, shows a powerful magnetic drill stand for the first time on **Stand No. 167** as well as items from its wide range of useful portable tools.

EARLY CONSTRUCTION CONTRACT

(*Continued from page 6*)

It is a single span of cast-iron with balustrade of the same material and is now part of a private road. The Lyonshall—Elsdon road is carried over the railway by a solid stone bridge, apparently untouched and in excellent state of preservation, although it is now being rapidly filled in and will soon be lost to view. A culvert, whose measurements comply almost exactly with the contract, may still be seen in the Kington Railway embankment as it approaches Eardisley.

Hedge and Fence

Most early railways paid special attention to erection and maintenance of good fencing as protection against cattle straying on the track. The contractors were required to enclose the railway property, leaving a width of at least 15 ft. between the hedges. These were to be planted with hawthorn quick of not less than three years growth, six in each yard. Outside the hedge "common fencing" was to be erected. Where existing walls were removed, their replacements were to be 5 ft. high and no less than 15 in. thick. Solidity was certainly the order of the day! Gate posts and stiles, too, were minutely specified. They were to be of oak or iron, at the contractors' option. On wooden gates the iron work, "wrought in the usual manner of the Country," weighed not less than 6 lb.; iron gates weighed 168 lb.

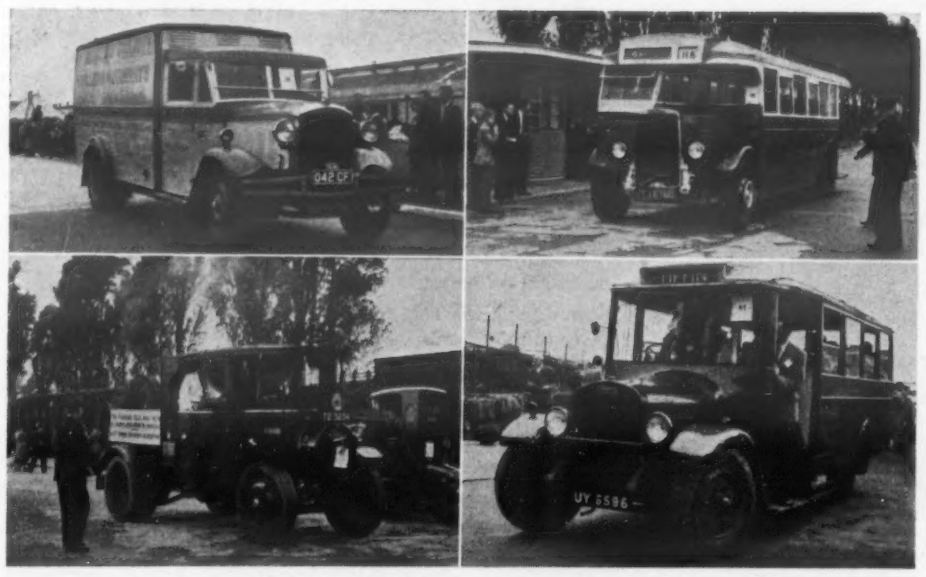
Hazledine and Sayce were required to provide all the necessary materials, including rails, the company arranging only the acquisition and purchase of the land. The cost of construction was £1,140 per mile; including land and all other primary charges, it worked out at £1,480, barely half the sum needed for the adjoining Hay Railway. The difference is probably accounted for by the small amount paid for land, some of which was acquired at nominal prices from the company's own proprietors and well-wishers.

Following the normal practice of the time, maintenance of the line was carried out by contractors. Hazledine and Sayce undertook to maintain the railway for 10 years from its completion, and the contract agrees the then usual yearly payment of £15 per mile for this work.

Quick Construction

The railway was opened to public traffic from Eardisley to Kington, 9 miles, on May 1, 1820, less than two years after commencement of construction. It is uncertain when the remaining 3¼-mile section from Kington to Burlinjobb (now Dolyhir) was brought into use, but this was certainly before 1825. The company paid a modest dividend, rising to 3½ per cent in the 1840's, but it declined rapidly after the opening of the Leominster and Kington Railway on August 20, 1857.

Five years later it was bought outright by the Kington and Eardisley Railway at a price of £45 for each fully paid-up £100 share, which clearly indicates the enfeebled state of the Kington's undertaking at that time. Only a small portion of the old railway was used in constructing the new line, from a point between Lyonshall and Almeley stations to near Upcott Pool, about three miles. The Kington—Burlinjobb section remained in active use until 1875, when the New Radnor line was opened on a parallel course. The whole of the Kington Railway site is still clearly traceable; there is plenty of evidence of its solid construction engendered by the contract.



Some of the entrants in the second Historical Commercial Vehicle Club rally held last Sunday in the A.C.V. works grounds at Southall: a 1931 3-ton Gilford van; the prototype 1934 Leyland Lion LT5A until recently working for Lytham St. Annes; below, a 1925 10-ton Foden steam tractor; and, right, a 1929 20-seat Thornycroft bus, also still in use carrying schoolchildren

A Brilliant Show

(*Continued from page 3*)

in the ranges of all the major producers; the pneumatic suspension seen on A.C.V., Guy and Leyland vehicles and disc brakes on the Guy. Only A.C.V. as yet offers air suspension on a standard production vehicle—at the rear end of the Bridgemaster and optionally on front and rear axles of the Reliance single-decker. On the Bridgemaster it is a natural development since the basic design already provides for braking and torque reactions and various longitudinal and transverse forces on the axles to be taken care of otherwise than through the springs and the conversion to air suspension becomes the relatively simple replacement of the original coil springs by the Dunlop Pneuride bellows unit, surge tanks and levelling valves.

Difficult to Replace

The fact is that the now (it seems) despised leaf spring performs so many functions so well that its direct replacement in existing conventional designs by air suspension adds to rather than reduces unsprung weight and generally transforms a simple clean-looking design into something resembling a Christmas tree. The acknowledged advantages of constant platform height and a more comfortable ride and greater stability irrespective of loading, plus a potential reduction in maintenance required, are certainly worth striving for and if their promise is fulfilled, no doubt future passenger vehicles will be designed specifically to embody air suspension. Meanwhile it is possible that a compromise as shown on the front end of the Leyland-M.C.W. Olympic bus at the show—a combination of light leaf springs with air suspension units—provides a convenient solution.

Whether the rear positioning of the engine adopted for the Atlantean will set a new fashion for double-deckers remains to be seen but other manufacturers might well be pressed to follow the Leyland lead if a majority of operators decide that the front entrance is what they want, when putting the engine across the frame at the rear eliminates interference of the transmission with the floor line, permits a large platform directly under the eye of the driver and enables the largest number of seats to be fitted into given plan dimensions. Executed in the Leyland manner, in which the whole engine and all its auxiliaries can be quickly dismounted as a running unit, it also provides substantial maintenance advantages. Certainly, the double-humped back end of the M.C.W.- and Alexander-bodied Atlanteans at Earls Court is not aesthetically pleasing but it gives the advantage of very quick all-round engine-transmission access and it is one of the features adopted specifically in response to the reactions of scores of operators to the flush-backed Atlantean of two years ago.

Pros and Cons of Integral Construction

There were fewer fully integral designs at the show this time and it seems that most operators have yet to be convinced that the advantages in weight saving of integral construction weigh adequately against the alleged greater difficulty of repair of accident damage and the upsetting of current dock procedures that deal separately with chassis and bodies. The emergence in production form of the Atlantean, the finalised design of which owes much to operator influence as a separate chassis and body, appears to point to a certain reluctance to go farther than the semi-integration of bodywork to outrigged chassis frame now practically universal, but perhaps the undoubted merits of the integral Bridgemaster, which alone of the double-deckers has independent front and pneumatic rear suspension and also provides maintenance advantages with its quickly removable running units, as it comes into wider service will do much to soften up this resistance.

It is unlikely that London Transport, peculiar though its problems might be, is completely wrong with the RM design, which sired the Bridgemaster, and B.M.M.O. would hardly be going ahead with the production of an integral double-decker if it was less than entirely satisfied with the performance, service life and ease of maintenance of its 250 S14 integral single-deckers. The S14 remains in a class by itself among full-powered full-sized single-deckers designed for a normal span of service life with an unladen weight of less than 5 tons and all of these integral designs come out with a distinct weight advantage over their semi-integral counterparts, the B.M.M.O. S14 and D9 double-decker perhaps more so than others due to the adoption also of Metalastik rubber suspension and Girling disc brakes.

Disc Brakes

A similar question mark hangs over the future of disc brakes which, at least for vehicle gross weights up to about 15 tons, appear to offer the advantages of reduced unsprung weight, fade-free performance, reduction of essential replacement time from hours to minutes and probably also, in quantity production, lower first cost. A Guy single-decker appears alone of the passenger vehicles at the show with disc brakes yet here again B.M.M.O.'s 250 S14 buses, which have now aggregated several million service miles, have apparently justified the use of disc brakes to the extent that they have also been specified for the company's D9 double-decker.

Brake performance is one feature that it is generally agreed has not quite kept pace over recent years with increasing performance of commercial vehicles in other directions. No one would claim that disc brakes would provide an immediate answer to this problem nor is it certain that they would show any advantage over drum brakes on heavy vehicles, despite undoubted successes on the racing track, but it is encouraging to see that they are being given a trial on the Guy and on the Foden K-type heavy-duty tractor. It is also encouraging to note the many improvements in drum-brake equipment at the present show, both in the adoption of increased servo power, greater lining areas and better attention to drum quality and ventilation in finished chassis and also in improved heavy-duty cam brakes.

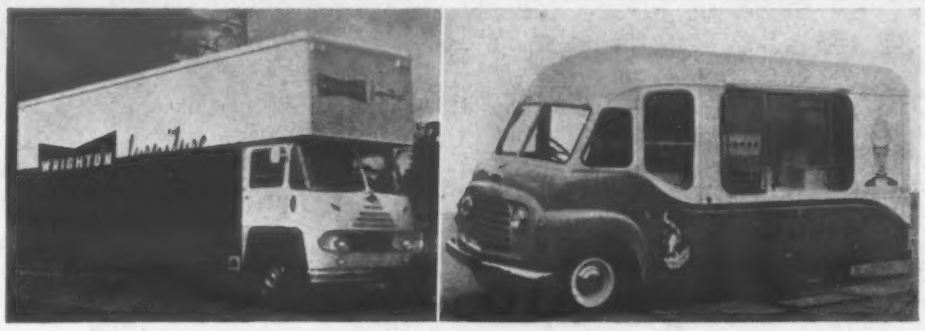
Effect of Speed

Whether present types of equipment will continue to be suitable if further increases in gross weights are permitted or even if substantially higher speeds of heavy vehicles are allowed on the new motorways is a question already exercising the minds of some designers. It is not only that the best of present lining materials show a marked drop in friction co-efficient when their temperature is raised beyond a certain point (admittedly a good deal higher today than it was only a few years ago) but there is also the problem of getting the heat away without bleeding out the hub lubricant or adversely affecting tyre performance.

The exhaust brake fitted with diesel engines can relieve the wheel brakes to some extent and might come into wider use in this country as on the Continent or perhaps it will be necessary to accept the weight and cost of an electro-magnetic retarder in the transmission. Alternatively, we might see the development of an entirely new form of friction material, of ceramics or sintered metal, with a lower but more stable co-efficient and higher-energy servos with some form of water cooling or forced-draught ventilation of the drums or discs.

A notable feature of this exhibition is the fairly general introduction of higher-powered diesel engines for both goods and passenger vehicles in the heavy-duty class. This development applies to both proprietary and vehicle manufacturers' own units. In some cases greater power is made available by offering the established Rolls-Royce and Cummins big engines as standard or alternative equipment, in others by the development of existing engines, as in the Foden two-stroke and the Meadows range, and in still others by the introduction of entirely new units, as in the Gardner 6LX and the A.E.C. and Thornycroft ranges.

Acknowledging the desirability of higher specific power rather than just the use of bigger engines, it is perhaps surprising that apart from the established Thornycroft Eberspächer-blown KRN6S engine, which now powers the new Antar chassis, only Meadows and Daimler show turbocharged road vehicle engines—the Meadows with a Holset-Schwitzer blower and the Daimler with the B.S.A. unit, though a Simms-Eberspächer blower is also seen on a B.U.T. railcar power unit. On the other hand, perhaps the remarkable power-weight ratio and specific fuel consumption (a best thermal efficiency of about 40 per cent is achieved) of the new Gardner engine indicates that a lot more can be done to the average run of diesel engines without the complication of turbocharging and moreover without recourse to very high rotational speeds to secure greater b.h.p., a device that often has unfortunate effects on the torque curve and on durability and fuel consumption.



Arlington Coronet III 1,740 cu. ft. Luton van on Bedford diesel passenger chassis and, right, Smiths body with ice cream manufacturing plant on Karrier Cruiser 1-ton chassis

Contemporary Components

With more powerful engines go higher-rated transmission units, axles and other components and again the development extends to both proprietary and chassis makers' own equipment. There has been a lack of proprietary gearboxes for high-powered vehicles, most British vehicle manufacturers preferring to produce their own units, but this is now partly made good by the introduction of the David Brown five- or 10-speed gearbox for torque input up to 750 lb./ft. and the Self-Changing Gears semi-automatic eight-speed unit for about the same torque. The latest Hobbs automatic or semi-automatic gearbox is said to be available for torque input as high as 1,000 lb./ft. while the Rolls-Royce hydrodynamic torque converter is produced with ratings to suit the whole range of the company's diesel engines.

Axle gears and axles to suit the heaviest classes of vehicle have been available for some time and examples of these produced by Kirkstall, E.N.V. (Eaton), Moss and others are exhibited. Clutches and couplings to keep pace with rising engine power have always been available when wanted from Borg and Beck, a commendation that also applies to the two Birfield companies, Hardy Spicer and Laycock, where transmission shafts are concerned.

Overall Benefits

The result is a useful new crop of heavy-duty vehicles available for export markets which have hitherto been served largely by American manufacturers, not to mention their value in our own large development schemes. Among those on show are the Atkinson Omega, the E.R.F. 66R, the Foden FRTU6/40, the Scammell Super Constructor, the Seddon Sirdar and the Thornycroft Antar. The British haulier also benefits from many of the developments announced for the show, which include new Albion, Atkinson, Foden, Guy, Leyland and Thornycroft trunk-haulage vehicles, while choice in the medium-weight class is extended by the introduction of the new normal-control Bedfords and forward-control Commers.

All in all, a splendid show which fully justified the sense of pride expressed by Mr. Watkinson in having been invited to perform the opening ceremony. In his own words, "This hall has seen many glittering displays but I do not recall any more impressive than this."

SOCIAL AND PERSONAL

I.O.T. Presidential Address

MAJOR-GENERAL G. N. RUSSELL, C.B., C.B.E., general manager and chairman of the board of management, British Road Services, and a member of the Eastern Area Board, British Transport Commission, will deliver his presidential address to the Institute of Transport at the inaugural meeting of the 1958-59 session, due to be held on Monday, October 13, at 6.15 p.m. in the Jarvis Hall, 66 Portland Place, London, W.1.

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Mr. J. Bloomfield has been appointed assistant to design officer, B.T.C.

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Dr. H. I. Andrews has been appointed assistant electric traction engineer (research), B. R. Central Staff.

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Mr. H. E. Gorick, C.B.E., general manager, Chamber of Shipping of the United Kingdom, has been elected to fill the vacancy on the council of the Institute of Transport which arose through the appointment of Mr. A. S. C. Hulton as a vice-president.

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As announced in a recent issue, Mr. J. W. Wicks, M.I.Mech.E., formerly works manager (buses and coaches), has been made works manager (road services), London Transport, thereby assuming responsibility for the Charlton and Fulwell trolleybus overhaul works also. Mr. Wicks joined the experimental department of the London General Omnibus Company in 1930 and later spent a year with Associated Equipment Co., Limited, where he was engaged on experimental work. He rejoined the L.G.O.C. in 1933 as a technical assistant in the office of the technical officer (buses and coaches) and responsible for the experimental section, becoming assistant to the technical officer in 1935. In September, 1940, he was appointed an officer of the London Passenger Transport Board with the title of technical officer and became responsible for the sections dealing with specification and design, development, inspection and testing. In 1941 he was seconded as assistant manager of London Aircraft Production and in 1945 became assistant engineer (development—buses and coaches) of the L.P.T.B. He was appointed works manager (buses and coaches) in 1951.

Mr. J. W. Wicks

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Mr. M. A. Darbyshire has been appointed road motor engineer, London district, London Midland Region, B.R. He was previously district road motor engineer, Blackburn.

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Mr. G. H. Langlands, who recently retired from the position of Southern branch manager, Power Petroleum Co., Limited, after 30 years' service, has been succeeded by Mr. F. G. Powell, formerly manager, North Western branch. Mr. G. A. Long has been appointed manager, North Western branch.

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We record with regret the death of Mr. T. R. Miller, chairman and joint managing director of the Motherwell Bridge and Engineering Co., Limited. He was 78. The Motherwell Bridge company was founded in 1898 with his father, Mr. A. R. Miller, as first chairman. Mr. Thomas R. Miller joined that concern in 1898, became managing director in 1921 and chairman in 1934.

Rarely together long enough to be photographed, the five members of the Rootes family did pose at the recent announcement of new Commer and Karrier vehicles
Left to right: Sir Reginald Rootes, deputy chairman of the group; Mr. Geoffrey Rootes, Sir William Rootes, chairman, Mr. Timothy Rootes and Mr. Brian Rootes

Having reached normal retiring age, Mr. Harry Green, director and chief engineer, retired from the Metropolitan-Cammell Carriage and Wagon Co., Limited, and relinquished his seat on the board on September 30. Mr. D. J. C. Robertson, who is already a director of the company, is appointed general manager, and Mr. J. L. R. Barnes and Mr. C. J. E. Large are appointed chief engineer, carriages and wagons, and chief engineer, railcars, respectively. Mr. J. L. R. Barnes is also appointed a special director of the company.

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The Minister of Transport and Civil Aviation has appointed Mr. A. Witcomb Smith, O.B.E., M.I.Mech.E., M.Inst.T., as a member of the Air Transport Advisory Council for the remainder of its current term of office—until July, 1960. Mr. Witcomb Smith relinquished the post of general manager and engineer, West Bromwich Transport Department, in September, 1957.

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The Institute of British Carriage and Automobile Manufacturers has announced the winners in its Maythorn essay competition for 1958. This was for an essay on the following subject: "Discuss the merits and demerits of present-day vehicle body construction and styling either private, public service or commercial vehicles), together with a forecast of desirable improvements." The following awards have been made: First, Mr. W. F. Warden, Ickenham, Middlesex (£35 and the Institute silver medal); second, Mr. J. Scott, Stirling (£25 and the Institute bronze medal); and third, Mr. C. W. Roberts, Hendon, N.W.4 (£20 and the Institute diploma).

Mr. Wendell S. Clough has joined the board of Dodge Brothers (Britain), Limited, as deputy managing director.

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Mr. J. Branson has been made sales manager of the car and commercial vehicle division of Jensen Motors, Limited.

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The Minister of Transport has appointed Mr. A. D. Pelly, D.F.C., to be a member of the Coastal Shipping Advisory Committee in place of the late Mr. W. J. Everard.

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Mr. C. K. Stringer, managing director of the Power Petroleum Co., Limited, retires on October 31 and will be succeeded by Mr. G. B. Howard-Rice, until recently establishment services manager, Shell-Mex and B.P., Limited.

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Mr. P. G. Wilks, of the Dunlop Rubber Co., Limited, has been elected chairman of the transport committee of the Federation of British Rubber and Allied Manufacturers in succession to Mr. G. W. Henderson, of the North British Rubber Co., Limited.

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Mr. J. Schofield, M.C., M.Inst.T., who has just retired as works manager (trolleybuses), London Transport, received his initial training in the workshops of the West Ham Corporation Tramways and was apprenticed with the Associated Equipment Co., Limited. While serving in the 1914-18 war he was awarded the Military Cross; he later transferred to the R.A.F. and qualified as a pilot. He joined the staff of the Metropolitan Electric Tramways in 1919 and was responsible for the rehabilitation of the rolling stock rendered unfit for service because of lack of material during the war years. In 1926 he was appointed chief assistant and deputy mechanical engineer of the M.E.T., L.U.T. and S.M.E.T. companies. He was on loan to the Ministry of Aircraft Production from 1940 to 1943 to undertake special duties in connection with the erection, construction and dispersal of factories. On rejoining the London Passenger Transport Board in 1943 he was appointed divisional rolling stock engineer (trams and trolleybuses) (North) and was transferred to Charlton works in 1944, being appointed works engineer (Charlton) in 1945. In 1951 he was made works manager (trams and trolleybuses), responsible for the overhaul work on trams and trolleybuses at both the Charlton and Fulwell works. His designation was changed to works manager (trolleybuses) when trams were withdrawn from the London streets in 1952.

Mr. J. Schofield

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The Minister of Labour and National Service has reappointed Sir John Forster, Q.C., to be president of the Industrial Court for a further period up to December 31, 1960. He has held the post since January 1, 1946.

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We record with regret the death, at the age of 62, of Mr. C. A. Gammon, M.I.Loco.E., assistant (wagon design), carriage and wagon engineering department, British Railways. He received his training on the L.N.W.R. and received the above appointment in 1951.

* * *

Mr. A. R. Purves, B.Sc. (Eng.), A.M.I.Mech.E., A.M.Inst.Pet., who has been appointed works superintendent (trolleybuses) in addition to his present post of engineering superintendent (road services), London Transport, served his apprenticeship with Douglas and Grant, Limited, Kirkcaldy. From 1927 to 1939 he was employed by Phoenix Oil and Transport, becoming works manager responsible for the construction and operation of that company's main workshop and garage in the Roumanian oilfields. He joined London Transport in 1939 as an executive assistant at Charlton works on repair and maintenance of trams and trolleybuses. During the war he was on loan to the United Kingdom Commercial Corporation and was engaged on maintenance and operation of road transport in Persia; he also became responsible for the construction and operation of a lorry assembly plant and for central overhaul workshops. Mr. Purves returned to London Transport in 1945 as assistant works engineer (Charlton) and was appointed an officer of the Executive with the title of engineering superintendent (road services) in 1951.

Mr. A. R. Purves

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Mr. Charles E. Chun, traffic manager, Birch Brothers, Limited, is joining the Overseas Touring Co. (E.A.), Limited, Nairobi, as from November 1.

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BEAMA (the British Electrical and Allied Manufacturers Association) is to hold a publicity conference, open to members only, at the Connaught Rooms in London on November 11 and 12. The conference will open with an address of welcome from Mr. Lewis Hart, publicity consultant, British Electrical Engineering Co., Limited.

* * *

Stratford-upon-Avon Blue Motors, Limited, announces that Mr. P. Scully, B.A., A.M.Inst.T., has been appointed manager to fill the vacancy caused by the death of Mr. W. Agg. Mr. Scully, at present assistant to the traffic manager of the Western Welsh Omnibus Co., Limited, will take up his new appointment on October 13.

* * *

In Eire, the Minister for Industry and Commerce, Mr. S. Lemass, has appointed a new Great Northern Railway Board, with Dr. C. S. Andrews as senior member. The other four members are: Messrs. T. P. Hogan, J. T. O'Farrell, M. F. Molony and W. McMullen. The last two were members of the previous G.N.R. board, and their term expired on September 30. The other three are members of the C.I.E. board.

IMPORTANT CONTRACTS

Commercial Show Orders

OPENING day of the Commercial Motor Show brought a number of very large orders to manufacturers for new vehicles. Leyland Motors, Limited, announced orders worth £3,000,000, one-third of them for export. Heavy buying of the new Atlantean rear-engined double-deck bus was reported, the total for this type alone approaching £2,000,000. In addition to these contracts, a repeat order for Leyland Worldmaster running units for 300 buses worth nearly £1,000,000 was placed with the company on Monday by Mr. N. Hortensius of Netherlands Railways. A fleet of 300 buses and coaches similar to those just ordered is now being placed in service with Netherlands Railways bus-operating companies.

Guy Motors

Within minutes of the opening, a £370,000 order was booked on the stand of Guy Motors, Limited, from T.G.B. Motors, Limited, Clitheroe. It covered 180 vehicles of various types, including 100 of the new Guy Warrior lightweight eight-wheelers, Otters and other versions of the Warrior lorry. The £370,000 represents the basic price; purchase tax adds a further £100,000.

Austin Motor Company

The Austin Motor Company received a single order worth nearly £2,500,000 for the new automatic Metropolitan taxi. The order for 2,000 of the new vehicles is to meet the initial requirements of the London area alone; further orders from the provinces and abroad are anticipated.

And David Brown

The automobile gearbox division of David Brown Industries, Limited, received a £20,000 order from a British commercial vehicle manufacturer for the new 557/480 gearbox. Introduced a few weeks ago to line up with the new Gardner 6LX diesel engine, this five-speed unit was designed in collaboration with the engine manufacturers. It is shown on no fewer than five stands at the Commercial Motor Show.

B.M.M.O. New Types Ordered

The Birmingham and Midland Motor Omnibus Co., Limited, has ordered into production in its own workshops 95 of the new integral D9 double-deck buses (described in MODERN TRANSPORT for September 13). A batch of 65 of the new C5 coaches, also referred to on September 13, is already in course of construction.

Cranes for Regents Canal Dock

British Waterways has placed an order with Thos. Smith and Sons (Rodley), Limited, for three electric 3-6 ton quay cranes for use at D and F quays, Regents Canal Dock, London, in replacement of existing obsolescent hydraulic equipment. The new cranes, for which quay-length tracks will be provided, will have 65-ft. jibs to facilitate overside working to barges.

Vauxhall Motors Exports

So far this year, Bedford leads world goods vehicle sales not only in Great Britain but also in 12 other countries. This was announced last week-end in a review of Vauxhall c.v. exports by Mr. Philip Copelin, Vauxhall Motors managing director. Mr. Copelin said that Bedford was also the best-selling British lorry in six other countries, while in the Netherlands and Sweden Bedford headed the sale of all commercial vehicles imported from abroad.

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TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

October 13—Pakistan.—Department of Supply and Development for 15 138-in. wheelbase 3-ton DIESEL CHASSIS-CABS; 10 similar with four-wheel-drive; two 10-20 ton capacity TRAILERS; and 20 per cent SPARES. Tenders to the Deputy Director-General of Supply and Development, Chittagong. (ESB/22312/58.)

October 14—Formosa.—International Co-operation Administration for eight 11,000-lb. g.v.w. four-wheel-drive RACK-BODY LORRIES with power-driven winch and derrick, suitable for setting poles up to 55 ft. long. Tenders to the Central Trust of China, Purchasing Department, 68 Yen Ping Nan Road, Taipei, Taiwan. (ESB/22724/58/ICA.)

October 14—Pakistan.—Department of Supply and Development for 50 110-h.p. DIESEL CHASSIS for 18,000-lb. gross weight and tropicalised and 15 per cent SPARES. Tenders to the Deputy Director-General of Supply and Development, Chittagong. (ESB/22319/58.)

October 15—Vietnam.—International Co-operation Administration for NICKEL-ALKALINE BATTERIES and solid ELECTROLYTE. Copies of tender documents from The Vietnamese Embassy, 12 Victoria Road, London, W.8, quoting Invitation No. 380-15078.

October 15—Federation of Rhodesia and Nyasaland.—Rhodesia Railways Tender Board for six diesel-engined forward-control rigid SIX-WHEELED BUSES to seat nine first-class and 44 second-class passengers, with a mail compartment to carry 1,000 lb. of mail and parcels and a roof rack to take 1,800 lb. Tenders to the Secretary, Tender Board, P.O. Box 1577, Bulawayo. (ESB/21130/58.)

October 15—Thailand.—State Railway for 70 metre-gauge four-wheel steel-underframe SALT WAGONS complete except for wooden parts for body door, etc. Tenders to the Stores Superintendent, State Railway of Thailand, Bangkok. (ESB/17626/58.)

SHIPPING and SHIPBUILDING

Netherlands Interest in Cork

PLANS for modernised building and repairing facilities in Cork Harbour have been disclosed. A £5,500,000 scheme is to be undertaken by Verolme United Shipyards, of Rotterdam. The cost of the project will be met partly by the Netherlands firm and partly by Government loans, through the Industrial Development Authority. The scheme will take about six years to complete. It envisages the reclamation of a large area of land at Rushbrooke, on which will be built two new slipways, which will enable vessels of up to 50,000 tons deadweight to be built. Additional workshops and buildings and a jetty will also be provided there. The existing Cork Dockyard site and equipment at Rushbrooke will be modernised, and the dry dock at Haulbowline enlarged to enable vessels of up to 47,000 tons to be repaired. In addition, tanker-cleaning equipment will be installed in connection with the forthcoming oil refinery at Whitegate.

Large B.I. Tanker

THE 37,000-ton deadweight oil tanker *Ellora*, launched at the Wallsend shipyard of Swan, Hunter and Wigham Richardson, Limited, for British India Steam Navigation Co., Limited, is the first of three tankers of this class with the Wallsend yard. *Ellora* will be the largest unit in the B.I. fleet when commissioned and will commence service next year under charter to the British Petroleum Co., Limited.

New York Owner under U.K. Flag

TWO 87,500-ton tankers recently ordered by the Naess Shipping Co., Incorporated, New York, from Mitsubishi Zosen K.K., Nagasaki, are to be operated by a company registered in Bermuda and will therefore fly the British flag. They will be the largest tankers under British registration and will be managed by a new associated company—Anglo-American Shipping Co. (Bermuda), Limited. The tankers are due for delivery in 1961-62.

Finnish Boycott of Panlibhonco Vessel

IN accordance with declared policy of boycotting ships whose crews are not covered by acceptable agreements, the Finnish Seamen's Union recently instituted a boycott action against the Costa Rican *Ais Nikolas*. The action, which lasted from September 5 to 9, was carried out with the aid of the Finnish dockers. It led to negotiations "resulting in a settlement bringing an acceptable agreement into operation," says the bulletin of the International Transport Workers Federation. The *Ais Nikolas* is one of some dozen Panlibhonco ships concerning which acceptable agreements have recently been negotiated.

Demarcation Disputes Unrealistic

THERE was an apparent lack of realism and of appreciation of current trends among the leaders of shipbuilding unions, said the deputy managing director of Harland and Wolff, Limited, Mr. Denis Rebbeck, at a launch at the Govan yard last week. "A chill wind is blowing," he said, "and it is now of the utmost importance that the employer and employee alike should press ahead together in quests for greater efficiency in organisation, in facilities and in methods of work, and in individual output. New approaches to construction problems, and new labour-saving techniques must be freely introduced and must not be sacrificed on the altar of out-of-date and restrictive working customs and practices. The trade union movement as a whole must give shipbuilders tangible proof of its goodwill. It must translate into terms of action its oft-repeated expressions of willingness to co-operate."

Further comment was forthcoming last Tuesday from Sir Murray Stephen, chairman of Alexander Stephen and Sons, Limited. He urged shipbuilding employers that they must "at all costs insist on a cessation of strikes, restrictions and demarcations," which in the long term could lead only to loss of orders and unemployment in the shipyards. He was speaking after the launch—delayed for almost a month by a boilermakers' strike—of the 14,000-ton tanker *British Fulmar*. No surer way could be found of producing shipyard unemployment than had in fact been found by the unions which had devised the numerous restrictions and demarcations imposed on the yards. For some years now the employers had simply been kicked from pillar to post and yet he would suggest that the employers really carried the ultimate responsibility for the future of the industry. If that was so surely the time had now come when they should shoulder this responsibility.

Special five-day courses on the new 1.6-litre Four 99 diesel engine have been started by F. Perkins, Limited, at the company's service school at Peterborough. The syllabus is similar to the courses on other engines in the Perkins range and full details can be obtained from the school's chief instructor.

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